

University of Cape Town

Faculty of Law
(Institute of Marine & Environmental Law)

Thesis for Masters in Commercial Law (course work) by ~

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TOPIC

**THE BIGGEST TREASURE OF ALL? ~ THE "FIFTH ELEMENT" OF
BIODIVERSITY**

Examining the South African legal framework regarding ethno-biological knowledge and biodiversity, with reference to international conventions and standards, with special emphasis on the 2003 CSIR / San People *Hoodia* settlement

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Research dissertation presented for the approval of Senate in fulfilment of part of the requirements for the LLM in approved courses and a minor dissertation. The other part of the requirement for this qualification was the completion of a programme of courses.

I hereby declare that I have read and understood the regulations governing the submission of LLM dissertations, including those relating to length and plagiarism, as contained in the rules of this university, and that this dissertation conforms to those regulations.

The word count for this dissertation (excluding footnotes but including bibliography) is **24 051**

To my wife Tracey and sons, Dylan & Connor

*'Only after the last tree has been cut down,
Only after the last river has been poisoned,
Only after the last fish has been caught,
Only then will you find that money cannot be eaten.'*

Cree Indian Prophecy

"Ike e:xarra //ke" – Diverse People Unite

The /Xam language motto on the South African Coat of Arms

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1. INTRODUCTION

1.1. Aim of the Dissertation

The aim of this dissertation is to complete the formal requirements for the University of Cape Town LLM programme (via course work). Whilst drafting the dissertation, the author was mindful of the need for an original academic treatise on the relevant subject matter but a parallel underlying intention was to draft a document that was not only technically correct but also commercially useful. In other words, the intention was to draft a document that a commercial lawyer, advising South African indigenous peoples on the issue of ethno-biological knowledge, could refer to as a 'blue print' for the giving of legal advice to those indigenous peoples or at least a reference point for how to protect and advance their client's rights.

1.2. Research Methodology

The author utilised the books, journals and documents found in the *Brand van Zyl Law Library*, *Nedbank Commercial Library* and the *Chancellor Oppenheimer Library* (all at the University of Cape Town). Certain verbal interviews were conducted and are acknowledged as sources. Extensive use was made of the Internet and newspaper and magazine extracts. All references used are denoted in footnotes, the rest is original.

I would like to take this opportunity to thank Mr. Roger Chennels, consultant to the Stellenbosch law firm *Chennels Albertyn*, who generously gave me access to much original material not ordinarily found in standard research sources and met me in person, spoke to me on the telephone and kindly forwarded information that he thought could have been of use to me in my writing of this dissertation. Roger Chennels also gave me access to a document prepared by members of the San in which they expressed their gratitude to him for his assistance to them in the *Hoodia / CSIR* negotiations and that document gave me both valuable source references and an insight into the meaning of this settlement for the San themselves. He has recently made much progress in prosecuting the San's land claims and I take this opportunity to wish him and his team well in their endeavours.

1.3 Definitions

The following definitions are used in this dissertation ~

- 1.3.1 “**BP**” means Before Present;
- 1.3.2 “**Convention**” means the Convention on Biological Diversity, adopted at the United Nations Conference on Environment and Development at Rio de Janeiro, Brazil on 5 June 1992;
- 1.3.3 “**CSIR**” means the Council for Scientific and Industrial research, a statutory council wholly owned and controlled by the Government of the Republic of South Africa;
- 1.3.4 “**EBK**” means ethno-biological knowledge;
- 1.3.5 “**IP Law**” means intellectual property law and “**IPR**” means intellectual property rights;
- 1.3.6 “**Government**” means the Government of the Republic of South Africa;
- 1.3.7 “**man**” means the species *Homo Sapiens Sapiens* and does not refer to the sex of its members and the use of the description ‘him’ is for convenience only and is meant to be gender neutral;
- 1.3.8 “**the San**” refers to the San People of Southern Africa (predominantly in the region of and around the Kalahari Desert), also known as “*Bushmen*”¹;

¹ The term “*Bushmen*” is sometimes regarded as being derogatory to the San, as it implies reference to being ‘backwards’, ‘unclean’ and ‘uncivilised’. Some San have taken to the name and embraced the significance that it has for their heritage (Stephenson 2003: pp3). The debate is probably a function of Western sensitivities, more than any thing else (Conversations with Roger Chennels 2003). The South African San Council, in the various agreements with the CSIR, call themselves ‘San’ and this most probably ends any debate in this regard and would have not allowed the use of the description ‘San’ if it offended that organisation or the members it represents.

1.3.9 “**TRIPS**” means the World Trade Organisation’s Agreement on Trade-Related Aspects of Intellectual Property Rights;

1.3.10 “**WIMSA**” means the Working Group of Indigenous Minorities in Southern Africa, a San networking and advocacy organisation co-ordinating and representing the San Peoples of Southern Africa;

1.3.11 “**WTO**” mean the World Trade Organisation.

1.4 Commercial Relevance of the Subject Matter

I found the subject of this dissertation to have compelling relevance to the modern South Africa. It appears to me at times that the story of the San in itself is one of the most bitter and tragic in this country’s and that of our neighbour’s history. Their story is fascinating, from their idyllic and undisturbed nomadic lifestyle of many thousands of years throughout Southern Africa, the impact of Bantu peoples on them from about 1750 BP onwards and the well documented savageries inflicted on the San by colonial and African born European people thereafter, the worst being the hunting licenses granted for their shooting by the colonial powers. More recently, the San have been at the forefront of the post-colonial bush wars in Southern Africa, not least because these wars typically took place in areas in which they were resident but because the San were often used in combat tracking roles, a role to which they were well suited. Latterly, the San have been at the receiving end of dubious relocations, largely due to the large mineral wealth found on lands which they lawfully owned. Recent events in Botswana are probably the most extreme of this issue. There has been widespread concern over the heightened abuse of alcohol amongst the San and the spread of HIV/AIDS. Regarding the latter, the San have a view on this disease, which in many ways reflects the different way, they view the world. In terms of their belief systems, the HIV virus is a ‘being’ or group consciousness’ much like a flock of birds and involved in the process of ‘eat or be eaten’. Life happens and whilst a conflict of interest might arise between one group (humans) and another (the HIV virus), it all comes down to what arises in a group in terms of the ‘will to live’, therefore a species will be overrun if that ‘will to live’ disappears¹.

¹ Editorial in *Natural Medicine* Winter 2004 (issue 14)

As lawyers, we need to be sensitive to the unique characteristics of each matter or transaction which we are involved and I believe that if one enters into a debate or research on issues relating to the San, without at least accepting that their world-view is probably very different from one own, one is severely handicapped. That is why the history of the San in South Africa is thus a compelling story of much of what is wrong in the sub-continent but hopefully the *Hoodia* settlement described in this paper can become a turning point in their integration and interaction with modern South African society.

The following different statistics on the international pharmaceutical market are compelling and because there is no one definitive source of these figures I have inserted a range ~

- Gross world-wide sales of pharmaceuticals are estimated to be \$US 130 billion annually²;
- The United States market for treating obesity alone is estimated to be US\$ 3 billion annually, treating sixty five million clinically obese people (should you wish to undertake your own examination of that culture and its problems with weight, please see the movie *Supersize It*.³)
- There are 119 drugs developed from higher plants available in world markets and it is estimated that 74% of these drugs were developed from the pool of traditional herbal medicine and medicines developed from 20 species from the tropics are worth US\$ 4 billion to the US economy annually⁴. The rest would have been developed independently of traditional uses; and
- As early as 1985, the annual world market for medicines derived from medicinal plants discovered by indigenous peoples amounted to a staggering \$US 43 billion!⁵

This massive industry is characterised by enormous companies, very high 'entrance' costs (largely because of the costs associated with research and development) and high profits. South Africa, with its abundant fauna and flora and *first peoples* like the

² DACST Draft Policy on IKS, quoting the Rural Advancement Fund International at pp 26

³ Stehenson 2003: pp 7

⁴ DACST Draft Policy on IKS, quoting the Rural Advancement Fund International at pp 26

⁵ Ibid.

San, holding ancient knowledge of the properties of plants, insects and animal derivatives, is well placed to exploit the development of new drugs.

The problem is a miss-match of resources. South Africa is a developing country and its indigenous peoples, who have knowledge of the medicinal properties of certain fauna and flora are, more often than not, unsophisticated from a Western-business point of view. They are the 'mine' of this valuable information. The 'miners' are invariably massive companies such as *Phyzer*, *Glaxo-Wellcome* and *Bristol-Myers Squibb*. Whilst not suggesting a conspiracy but assuming that the executives of these companies are concerned primarily with the profits delivered to their shareholders, it is safe to say that they will attempt to develop the next big drug, the new *Viagra*, at the lowest cost to their company. That means finding the active ingredient in a bulb, grub or piece of bark that cures cancer, suppresses the appetite or boosts the immune system. However, when these companies empowered with teams of lawyers, savvy business people and expert scientists enter the field to 'mine' the information they seek, they will invariably come into contact with peoples who simply cannot compete with them commercially. These peoples are thus open to exploitation in this regard. The indigenous peoples of South Africa are such a people.

The solution, I suggest, is to facilitate and manage these big companies access to this information in South Africa, yet protect those vulnerable to exploitation. That is the *negative* duty. The *positive* duty is to ensure that this great wealth of knowledge, this 'gold' of the information age, is tapped, with tangible commercial benefits accruing to the original discoverers of that knowledge. This dissertation will thus look at the international and local legal framework managing the exploitation of indigenous knowledge in South Africa and what it means to indigenous people.

There are two deep ironies at play here ~

(a) The drug compound of P57, which will be discussed in greater depth below, is to be used as an appetite suppressant in First World markets, where levels of obesity (levels that require medical attention and not people who simply look in the mirror and feel they should lose some weight) are estimated to be at over the one hundred million mark world-wide.⁶ Such obesity is a consequence of the

⁶ Melanie Gosling (no title to report, writing in the Cape Times, July 11, 2001)

abundance of food amongst modern culture (though obesity is obviously not unique to the modern world, the fact that it is so wide spread is) and the sedentary lifestyle of a convenient world. Whilst watching television or reading any popular media, one is inundated with advertisements for products often called *fat trapper* and the like, new diets and faddish exercise machines. Bookstores have whole sections devoted to healthy eating and diet books. Without stating the obvious, it is an issue that not only is of interest to modern society but often consumes it and the advent of widespread anorexia is probably also proof of deep-seated issues with food and nutrition. Thus, the company that develops a medication that either prevents over eating or reduces the consequences of same, with the same effectiveness that an antibiotic attacks bacterium, will put itself in the league of the company who develops a cure for cancer or an AIDS vaccine. It would be very big news indeed. The irony is the role of the San in the potential exploitation of P57, the active ingredient that's suppresses the appetite, as extracted from the Hoodia plant. The San are visually typified in extreme physical settings and desert-like terrain. Without being patronising, they are usually wind and sun beaten and look like people who have fought hard for their daily survival, yet they are not usually thin. Genetically, the San are predisposed by Nature to carry fat in their buttock area for the simple reason that their nomadic existence and the harshness of the terrain in which they live typically exposes them to feast or famine and not much in between. Thus, a people who may look fat at times are not so, not because of the abundance of food but because of a lack of it. These are the people who carry knowledge of this lack and how to manage it in their daily life, knowledge so precious to our over abundant society. A deep irony, not just for lawyers who are interested in the protection ethno-biological knowledge but for all those who are concerned with the imbalances of the modern world; and

- (b) It is a cliché that this is the *information age*. Traits of this age are well known and include the expansion in the use of computers and computing power, the Internet, satellite communication, digital television, cell phones and the list goes on. The role of lawyers has been extended to try to manage the ownership of intellectual property, consisting of rights that are far more mobile and malleable than say, forty years ago. Copyright Law and Trademark Law have been stretched and a new speciality field of law has developed and that is Information Technology Law, the scope of which is beyond this paper. Suffice it to say that information and the control thereof is one of the most important aspects of the modern commercial and

social society. As I write this dissertation, much media attention is being given to the NASDAQ Exchange listing of the California, USA based Internet search engine, *Google*. It will be listed at a so-called *price: earnings ratio* between a range of 154-192!⁸ What this means is that for every one US dollar spent during the initial public offering of this stock i.e. capital expenditure, an investor can expect, at current earnings per share, to wait between 154-192 years to get that same dollar back. When one sees a number like this in a stock or share price, you deduce that the market believes that there will be spectacular capital growth in the stock price and / or potential *future* earnings (the former being the function of the other) and thus warranting this imbalance in price and the relevant ratio. To place this in perspective, on 8 August 2004, listed on the stock broking website www.psg-online.co.za, one sees the *price: earnings ratio* of the blue chip stock, Anglo American Limited listed on the Johannesburg Stock Exchange at 14.7. Why the fuss over *Google*? *Google* is a search engine that attracts approximately 100 million separate 'hits' or visits from people a day.⁹ The amount of specific visitors (or 'eyeballs' as called by those in the business) has no direct economic value to the company because the users of this site do not pay for its service i.e. everyone with access to the Internet can log into *Google's* web site and use its search functions free of charge. The real commercial value is that advertisers regard all these different users as being valuable targets to sell their wares. The money is thus in the advertising. It is value in something that only exists in the belly of a computer and the minds of the public i.e. it is only information and nothing else. The relevance and irony to this paper is that a people who until fairly recently lived by Middle Stone Age customs and practices bear in their verbal tradition and minds information regarding the *Hoodia* plant and its effects on hunger and thirst. Information that is valuable to the San in the sense of life and death but information valuable to the modern world for one reason only, money and in turn, profit.

Before we look at more depth at the particularities of the San *Hoodia* case and without attempting to provide a summary of the contents of this paper, the following story from

⁸ <http://cbs.marketwatch.com/news/story.asp?siteid=google&dist> *Google, it Doesn't Add Up*, August 13, 2004

⁹ <http://www.guardian.co.uk/business/story/0,3604,533679,00.html> *Google Hits on Profit Formula*, August 8, 2004

the investigative television programme *Carte Blanche*⁷ neatly illustrates the aforementioned potential abuse of holders of indigenous knowledge (in this case musical knowledge) by those more commercially savvy than them. It also illustrates that the exploitation is sometimes not based on malice or some sort of negative intent but may happen unintentionally and it illustrates the complexities particular to knowledge, indigenous peoples and modern commercial interests ~

Solomon Linda (known as “Solomon Zulu”) was a Zulu migrant worker who, in 1939, penned and recorded with his group the *Evening Birds* the song that ultimately wound up entrenched in Western culture as the “*Lion Sleeps Tonight*”. The song was originally known as “*Mbube*” and was recorded under the Gallo label in South Africa. It was a song in the style of singing called *isi’cathamiya*, a Zulu name for ‘call and response’.

The original “Mbube” was soon thereafter re-recorded in the United States by Pete Seeger, of a group called the *Weavers* and re-titled as “*Wimoweh*”. The song was slightly amended when the word ‘mbube’ became ‘wimoweh’, as Seeger could not hear the pronunciation clearly. As Gallo owned the song recorded by the Evening Birds, it should have challenged the re-recording by the Weavers but did not and instead the song was deemed to be a new creative work and thus deserving of copyright protection in the United States. The copyright to the song then apparently vested with a company called Folkways Music. Nine years later, the song was re-recorded by a group called the Tokens, who added the famous words: ‘*In the jungle, the mighty jungle, the lion sleeps tonight*’. As the authors of this new song [Messrs. Weiss, Pereti and Creatore] thought that “Wimoweh” was in the public domain, they attempted to register their copyright. Folkways Music challenged this and ultimately, the two parties struck a deal whereby they shared royalties on the song. This remained the case for twenty years and was only disturbed when Folkways Music contacted Linda’s daughter, Regina Ntsele to re-assign the rights of the song back to her. They were obliged to do this, as their copyright was due to expire under United States law. This she accepted, after apparently receiving poor legal advice and subsequently received a relatively small amount of royalties in

¹⁰ Copyright M-Net Limited, *Carte Blanche*, insert entitled “Out for a Song”, produced by Brett Lotriet and aired 24 June 2001. Summary at www.cartablanca.co.za & insert entitled “The Lion Wakes” produced by Seamus Reynolds and aired on July 4 2004

return (R170 000). In 1989, Folkways Music and Messrs Weiss *et al* had a fall out over royalties and the dispute went to arbitration, ultimately leaving the song as the property of Messrs Weiss *et al*, which remains the case to this day. According to the Rolling Stone magazine, the song has been re-recorded at last one hundred and fifty times by different artists and featured in at least fifteen movies and stage musicals and translated into several languages including French, Japanese, Danish and Spanish.¹¹

The net result was that Solomon Linda (and his estate) and the Evening Birds received an initial amount from Gallo in 1939 (unknown but presumed to be very small) for the creation of “Mbumba” and the subsequent royalty paid in the 1980’s. This is in comparison with the real commercial value of the song at many millions of United States dollars.

Now a groundbreaking legal manoeuvre is taking place in South Africa. Dr. Owen Dean, an attorney at *Spoor & Fisher Attorneys* is suing the Disney Corporation, as they have been identified as the “most active user” of the song (and the cynic might say have the deepest pockets) in a Pretoria, South Africa court in an amount of R15 million. This is for royalties due to Linda’s family, the Ntsele’s, from 1987 to the present date. He is basing the action on an archaic clause in the South African Copyright Act of 1916 (which would have regulated the initial sale to Gallo in about 1939), whereby the copyright in a creation would revert to the originator for the first twenty-five years after the creator’s death. Thus, whilst the copyright typically vests in the owner for fifty years after the author’s death, the Copyright Act of 1916 contains a clause where such rights return to the author (or his heirs) twenty five years after his death. Thus, the rights to the song should have vested in Linda’s family in 1987 (twenty-five years after his death) but didn’t. Whilst Dr. Dean does not challenge the initial assignment of the rights to the song to Gallo, nor does he try to unwind the intervening confusion as to ownership thereof, he claims that the current owner, the Disney Corporation, has made large amounts of money since 1987 from the song, especially from its smash hit, “The Lion King”. As part of his legal strategy, Dr. Owen has successfully sought and obtained *locus standi* against the Disney Corporation in the South African courts, by attaching its assets

¹¹ www.news24.com/news24/entertainment *Disney Case: Verdict Reserved*, August 25, 2004

within South Africa. These assets are more than two hundred of Disney's trademarks registered in South Africa i.e. Mickey Mouse, Donald Duck and the like, with an estimated world-wide value of US\$ 33.5 billion. The next step will be to prove in court that the Copyright Act of 1916 provides valid grounds for action to the Ntsele's and if so the damages claim may well succeed.

What is the relevance of this story to this dissertation? Whilst the dilemma faced by Solomon Linda and his descendants is perhaps more correctly placed in the category of Copyright Law and therefore found some relief in the provisions of the Copyright Act of 1916, the problems faced are classically similar to those of indigenous peoples whom are exploited by more sophisticated commercial persons and companies. The story, unfortunately, beautifully illustrates how a miss-match of resources, power and expertise leads to commercial imbalances no different to those experienced in the more widely found exploitative practices of colonial and neo-colonial commercial activities. The lead elements of this are thus illustrative of the problems faced by indigenous people's world-wide ~

- Solomon Linda was a migrant worker who bordered on being indigent. He was 'unsophisticated' in the Western-commercial sense and so were his descendants. That being said, he was 'sophisticated' in his knowledge of indigenous matters, especially indigenous music;
- He was the 'holder' of indigenous knowledge, being the song "Mbube" in the *isi'cathamiya* style. This was knowledge he obtained as a result of his being part of an African people i.e. the Zulu's;
- His knowledge was commercially exploited by a sophisticated company, Gallo and subsequently further exploited by other companies and groupings of people (Folkaway Music, Disney Corporation etc.);
- The song (representing indigenous knowledge) was slightly re-worked and was thus regarded as a new and original creation under United States copyright law;
- He and his descendants received relatively little remuneration for the commercial exploitation of his indigenous knowledge, in comparison to the true value arising from the commercial exploitation of that knowledge;

- The South African and International legal systems provided little or no protection to Linda and his descendants (the action by Dr. Owen Dean may change all this but note should be taken that he is making use of an archaic aspect of the South African Copyright Act of 1916 and not a widely known or available remedy, thus it could be said that whilst Solomon Ntsele's descendants may receive some form of compensation, their story is by far the exception and not the norm and is largely due to a technicality, not due to the thrust of a major piece of legislation).

2. BIODIVERSITY

2.1 What is Biodiversity?

Biodiversity is, as the name suggests, the extent of diversity amongst fauna and flora.

The 1992 Convention on Biological Diversity formally defines biodiversity at Article 2 as "*...the variability amongst living organisms from all sources, including, inter alia, terrestrial marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.*"

The draft White Paper on the Conservation and Sustainable use of Biological Diversity ("the White Paper") defines biodiversity as "*The number and variety of living organisms on earth, the millions of plants, animals and microscopic organisms, the genes they contain, the evolutionary history and potential they encompass and the ecosystems, ecological process and landscapes of which they are integral parts. Biodiversity thus refers to the life-support systems and natural resources upon which we depend.*" What is worth mentioning here and this is perhaps a weakness in much thinking on the environment and on biodiversity is that man is an element of biodiversity himself. In much of modern thinking, man is seen as a participant on the stage set by the planet and the various plants, animals and bacteria that share it with him. What we often forget is that man himself is a mammal (albeit one who has mastered his environment) so when we talk of biodiversity, we must not forget to include ourselves therein. The Draft Recognition, Promotion, Development and Protection of Indigenous Knowledge Systems Bill (Department of Arts, Culture, Science and technology, June 2001) does not directly refer to biodiversity but defines 'Biological Resources' as (at Chapter 1[v]) – "*includes genetic resources, organisms or parts thereof; populations or ecosystems including any component thereof with*

actual or potential use or value.” There are two important element here and the latter is a function of the former. Firstly, the resource itself in its natural state and secondly, the use or value thereof. What is not stated but what is implied in the concept of *value* are the powerful forces of commercial exploitation and of course, the profit motive. More about this later.

The White Paper (at part 9) defines three key elements of biodiversity ~

Genetic Diversity

“Genes are the biochemical packages passed on by parents to their offspring and which determine the physical and biochemical characteristics of offspring. Genetic diversity refers to the variation of genes within species, making it possible to develop new breeds of crop plants and domestic animals and allowing species in the wild to adapt to changing conditions.”

Species Diversity

“A species is a group of plants, animals, micro-organisms, or other living organisms that are morphologically similar; that share inheritance from common ancestry; or whose genes are so similar that they can breed together and produce fertile offspring. Usually different species look different from each other.

Species diversity refers to the variety and abundance of species within a geographical area. Often the term ‘species richness’ is used as a measure of species diversity but this refers only to the number of species within a region and thus technically only one component of biodiversity.”

A species thus represents a group of organisms, which have evolved distinct inheritable features and occupies a geographic area”¹² Thus the more different species within one particular geographical are the more species diversity that area has and here one thinks of the Western Cape Floral Kingdom mentioned below, it being said that Table Mountain alone has more different species of plant that Great Britain.

Ecosystem Diversity

¹² Glazewski 2000: pp 301 quoting Wilson *The Diversity of Life* 1992

“An ecosystem consists of communities of plants, animals and micro-organisms and the soil, water and air on which they depend. These all interact in a complex way, contributing to processes on which all life depends such as the water cycle, energy flow, the provision of oxygen, soil formation and nutrient cycling. Ecosystem diversity can refer to the variety of ecosystems found within a certain political or geographical boundary or to the variety of species within different ecosystems.”

In fact if one would view the planet earth from the moon one could say that it was one ecosystem, broken down into the numerous ecosystems that inhabit a particular region.

The White Paper also refers to so-called **landscape diversity** and defines it as follows

~
“A landscape is a collection of elements which consist of defined assemblages of plants animals, abiotic substrata such as rocks, land use patterns, as well as cultural or scenic features and socio-economic and political dynamics. For example, wetlands, fragments of forest, mountains or rocky shores may comprise landscapes, as may the presence of croplands or religious structures. The boundary of a landscape will vary according to the scale being used and the purpose of the investigation. Landscape diversity refers to the number of landscapes in the geographical area being studied”.

To summarise, there are four main components of biodiversity, being: **genetic, species, ecosystem and landscape.**

The Convention, in the famous Article 8(j) mentions a **fifth element of biodiversity** and I quote the text in full (my underlining)~

“8(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices”

This element¹³ is the knowledge, innovations and practices of the indigenous peoples of the world *vis á vis* the lands that they inhabit (or used to if displaced) and hence the inspiration to entitle this dissertation: “***The Biggest Treasure of all? ~ The ‘Fifth Element’ of Biodiversity***”. The sub-text of the topic of this dissertation could possibly be stated as: “*What are the most commercially exploitative aspect of biodiversity and the least regulated?*” The answer is the *fifth element*.

In an ideal world we would not be raising this subject and would be focusing on the environment and its sub-elements (fauna, flora and the different ecosystems) and enjoying it in either an existential or intellectual way. That is not the reality that man has faced, probably from the beginning of the Industrial Age in the 18th century and has become more and more concerned with the exploitation of the environment for commercial gain and profit. The latter has become the most important motivation of man regarding his interaction with his environment and whilst traditional environmentally exploitative activities such as large scale farming, logging, mining, trawling and power generation continue and obviously expand to cope with the growth in the world’s population and the twin curses of increased consumerism and expanded urbanisation, it is the more subtle and knowledge based aspects of environmental exploitation such as: genome mapping, genetic engineering, cloning and bio-prospecting that are attracting more and more attention. The reasons are simple and are a result of the massive increase in technological advances since the Second World War, whereby, with the advance of computer technology and the advent of electronic and infra red microscopes, the mysteries of the genetic codes of living things can be accessed. Therefore, whilst the exploitation of the *thing* in itself remains important, the knowledge and exploitation of the *make-up* and *substance* of the *thing* is fast catching up as far as importance goes. In fact, to illustrate the speed of developments in these fields, if this dissertation was written forty years ago, it would probably have been dismissed as science fiction.

Lastly, regarding the definition of biodiversity, is that contained in the *National Environmental Management: Biodiversity Act, No. (as of yet unnumbered) of 2004* (“the Biodiversity Act”) found in Section 1 ~

¹³ Ibid. at pp 301 This short phrase in Professor Glazewski’s book inspired me to approach the topic from that particular angle and the topic of the commercial value of indigenous knowledge itself was suggested to me by him and for that I am most grateful

“ ‘biological diversity’ or ‘biodiversity’ means the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems”

This definition relies much on the concept ‘variability’ yet gives no real indication of what that may mean and though the Act and its definitions give some certainty to the regime concerning ethno-biological knowledge in South Africa, I am concerned that it may be left to the courts to flesh out the real, practical, commercial parameters of this Act and its definitions. This is by no means unusual in the South African legal context and I am in no doubt that the years ahead shall see the courts and academics of South Africa giving life to this Act.

The case study I have chosen to illustrate these quickly moving developments is that of the commercial exploitation of the *Hoodia* plant, indigenous to Southern Africa and its use over generations by the San. The San have long since identified two amazing characteristics of this plant and they are (a) appetite suppression and (b) thirst alleviation. We look at this in detail in Part 5 below (where all relevant sources are referenced) but suffice to say for this introduction that the Western world’s interest in this plant and its use by the San is not the plant itself, it is not a fight or exploitation of plant breeder’s’ rights or farming methodologies, it is also not a quest to control swathes of land where this very unassuming plant can grow i.e. it does not bear the hallmarks of typical modern exploitative practices but has a completely different angle. The value in this matter is the genetic make up of a substance innocuously named *P57*. This is an element of the *Hoodia* plant’s genetic code that has been identified as being the active ingredient in appetite suppression and thirst alleviation and this was the aspect of the *Hoodia* plant that the San (unknowingly) found so useful in their existence in some of the worlds most inhospitable areas, the Kalahari Desert. Thus, the Western corporate do not really value the *Hoodia* plant in itself and there are no plans to replant Arizona or Wyoming with vast swathes of *Hoodia*, the San themselves have no real further part to play in this knowledge transfer (that is complete) and will thus not be relocating to Europe or North America. The entire commercial value in this case was the identification of the active ingredient that caused the desired affects in man (particularly regarding appetite suppression) and the ability to replicate this genetic coding in a synthetic manner, duplicate that millions and millions of times and package that ‘information’ in tablets and sell them in pharmacies all over the world. The reason

that this massive undertaking has been embarked upon (and is far from complete at the time of writing this paper) is not one of charity or altruism but simply one of commerce, in particular corporate profit. Hence, my belief that this '*fifth element*' of biodiversity, the knowledge and practices pertaining to specific aspects of an ecosystem (usually the benefits of a plant) as opposed to the ecosystem or the plant itself are what will be the driving factor in future commercial exploitation of the environment and thus the *fifth element* (ethno-biological knowledge) of biodiversity may yet turn out to be the biggest treasure of all.

2.2 South Africa's Rich Natural Biodiversity Resources

South Africa has a spectacular range of biodiversity, the most significant being the Western Cape floral region, having more species of animal and particularly plants than an area of tropical rainforest of similar size, has been designated one of the six floral kingdoms of the world and was declared a World Conservation Union 'hot spot' in 1997. South Africa has a land surface of approximately 1,1 million square kilometres, being 1% of the total earth's land surface yet South Africa contains 10% of the world's known bird, fish and plant species and 6% of the world's mammal and reptile species.¹⁴

Apart from the Western Cape floral region, South Africa as a whole has one of the highest species densities in the world ¹⁵ with 20 300 species of flowering plants, 243 different types of mammals, 800 species of birds, 370 types of reptiles, 220 types of freshwater fish, 2000 marine varieties and 80 000 types of insects. There are also many further undescribed species.¹⁶

2.3 Biodiversity Prospecting (Bioprospecting)

Bioprospecting is such an apt terms as it conjures up the image of someone on the *Yukon* or on the *Witwatersrand* scratching around in the soil looking for gold or perhaps panning in a river. The modern prospector is no different from those of old and will

¹⁴ www.botany.uwc.ac.za/envfacts/facts/biosa

¹⁵ Glazewski 2000: pp 300

¹⁶ www.botany.uwc.ac.za/envfacts/facts/biosa

physically have to go into relatively (and sometimes very) remote rural areas and look for the commodities he or she is prospecting for. Only this time, the prospector will not have a small pick and a bag of samples but a lap top, tape recorder and video camera. This prospector is a bioprospector and is really no different from the pen sketch of the traditional one we know from the last one hundred years or so. We also know what that the results of traditional prospecting were that if a mineral deposit was found, it typically led to unbridled exploitation and economic plundering, with little or no regards for the traditional inhabitants of the land upon which the minerals were found, of which South Africa has many examples. We now know that the modern prospector and his employers are really no different and as holders of traditional lands were once exploited, so holders of traditional knowledge are just as easily exploited

Bioprospecting is the search for wild species, genes and their products with actual and potential use to humans¹⁷. The emphasis on the word *use* must be the concept of profit for, as said elsewhere in this dissertation, these exercises in searching for ethnobiological knowledge are rarely undertaken for altruistic reasons but are undertaken for profit. Even the famous British corporation *The Body Shop*, which is famously known for its support of indigenous and traditional communities that either sell its commodities or inspire its products, is predominantly profit driven and whilst one lauds their high profile support (both emotional and financial) we should not forget that such an organisation is firstly accountable to its shareholders and secondly its creditors. Having said that, as an aside, I do not view *The Body Shop's* commercial activities too cynically as they provide a template for other corporations to follow, after all, they do focus on the sustainability of the resources and communities with whom they deal and in which they trade and that is in itself admirable.

Scientific and commercial investigation and collection of traditional knowledge and resources and biological resources is of course not a new thing and has been going on for centuries (Darwin's epic voyages to the Galapagos Islands may be some of the most famous) but bioprospecting has increased dramatically in recent years.¹⁸ I think the convergence of the pressures (or at least awareness) caused by instruments such as the Convention on Biodiversity and the massive increase in the speed of information

¹⁷ Glazewski 2000: pp 299 quoting Reid *et al Biodiversity Prospecting: Using Genetic resources for Sustainable Development*

¹⁸ Dutfield 1999: pp 1

flow on the Internet have created pressure on those corporations and research institutes that undertake bioprospecting to do so with more sensitivity and it has emboldened indigenous peoples and their advisers to protect their rights more vigorously.

The Biodiversity Act contains the following definition of biosprospecting in Section 1 ~

“bioprospecting”, in relation to indigenous biological resources, means any research on, or development or application of, indigenous biological resources for commercial or industrial exploitation, and includes—

- (a) the systematic search, collection or gathering of such resources or making extractions from such resources for purposes of such research, development or application;*
- (b) the utilisation for purposes of such research or development of any information regarding any traditional uses of indigenous biological resources by indigenous communities; or*
- (c) research on, or the application, development or modification of, any such traditional uses, for commercial or industrial exploitation”;*

and an *Indigenous biological Resource* is in turn defined in Section 1 as ~

“(a) when used in relation to bioprospecting, means any indigenous biological resource as defined in section 80(2); or

(b) when used in relation to any other matter, means any resource consisting of—

(i) any living or dead animal, plant or other organism of an indigenous species;

(ii) any derivative of such animal, plant or other organism; or

(iii) any genetic material of such animal, plant or other organism”;

We see that the definition of bioprospecting and indigenous biological resource covers all manners of classic bioprospecting whereby a person or group of persons seeks to bioprospect within South Africa. The Act also makes provisions for specific regions,

most probably those with unique flora and fauna like the Cape Floral Kingdom, to be declared a so-called bioregion, in Section 1~

“bioregion” means a geographic region which has in terms of section 40(1) been determined as a bioregion for the purposes of this Act”

3. THE BIODIVERSITY LEGAL REGIME

3.1 The International & South African Biodiversity Legal Framework

Much of the legal framework surrounding and regulating the exploitation and protection of biodiversity and thus ethno-biological knowledge is no older than twelve years. That is staggering considering that aspects of South Africa Roman-Dutch Law can be traced back to approximately 2500 BP¹⁹. The last decade has seen a vast expansion of awareness and debate surrounding what has become known as the *‘intellectual property rights of indigenous peoples’*. The South African constitution obliquely refers to these matters in Section 25 of the Bill of Rights where the rights relating to the protection of property ownership are dealt with and it is stated that ‘property is not limited to land’. Biological resources as well as indigenous knowledge can thus potentially fall within the ambit of ‘property’²⁰. Further, Section 24 states that everybody has the right to enjoy environmental protection through the *“promotion of conservation”* and *“secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”*. These objectives can be interpreted to satisfy the three broad goals of the Convention i.e. those of conservation, sustainable use and equitable benefit sharing.²¹

The seminal event from a legal point of view was the coming into being of the Convention on Biodiversity (“the Convention”) on 29 December 1993. This instrument was negotiated under the auspices of the United Nations Environmental Programme and signed by one hundred and fifty sovereign states at the Rio Conference²². South

¹⁹ Thomas 1976: pp21

²⁰ Glazewski & Witbooi 2001: pp6 & The Constitution of South Africa, Section 25

²¹ Glazewski & Witbooi 2001 pp 7 & The Constitution of South Africa, Section 24

²² Ibid. pp4

Africa subsequently ratified the Convention on 2 November 1995 and this country is now obliged to implement the provisions of the Convention domestically²³. The Convention is primarily concerned with the promotion of the conservation of biodiversity but has major sub-themes of obliging signatory parties to pursue the sustainable use of the components of biodiversity and enter into benefit sharing programmes. The latter is to be effected by (a) the granting of access to genetic resources (b) transfer of relevant technologies and (c) appropriate funding mechanisms²⁴

Article 6 of the Convention states at sub-clause (a) that Contracting Parties shall: “develop national plans, strategies or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in the Convention relevant to the Contracting Party concerned” and at (b) that Contracting Parties shall: “Integrate, as far as possible and appropriate, the conservation and sustainable use of biological diversity into relevant cross-sectoral plans, programmes and policies.” The South African Government has effected the terms of Article 6 (a) and (b) by drafting and implementing (the roll-out schedule is below) the **National Environmental Management: Biodiversity Act, No. (as of yet unnumbered) of 2004 (“the Biodiversity Act”)**, under the auspices of the National Environmental Management Act, No. 107 of 1998 framework. The Act became or shall become effective on the following dates²⁵ ~

- Sections 49, 57, 65, 66 and 71 and Chapter 7 on 1 April 2005;
- Section 105 and Chapter 6 on 1 January 2005; and
- The rest on 1 September 2004.

The Act contains a number of most welcome provisions pertinent to ethno-biological knowledge in the South African context and bioprospecting and creates an institution to be called the South African National Biodiversity Institute, which will fulfil the role currently being played in this regard by the National Botanical Institute. I have quoted

²³ Ibid. at pp5

²⁴ Ibid. at pp 4

²⁵ As verbally informed by the office of Mrs. Bev Geach of the Department of Environmental Affairs and Tourism

extracts from the text *verbatim* as happily the drafter of this legislation used accessible language in doing so and the text is thus largely self-explanatory (my underlining throughout) ~

“BIOPROSPECTING, ACCESS AND BENEFIT-SHARING

Purpose and application of Chapter

80. (1) The purpose of this Chapter is—

- (a) to regulate bioprospecting involving indigenous biological resources;*
- (b) to regulate the export from the Republic of indigenous biological resources for the purpose of bioprospecting or any other kind of research; and*
- (c) to provide for a fair and equitable sharing by stakeholders in benefits arising from bioprospecting involving indigenous biological resources.*

(2) In this Chapter—

“indigenous biological resources”—

(a) includes—

- (i) any indigenous biological resources as defined in paragraph (b) of the definition of “indigenous biological resource” in section 1, whether gathered from the wild or accessed from any other source, including any animals, plants or other organisms of an indigenous species cultivated, bred or kept in captivity or cultivated or altered in any way by means of biotechnology;*
- (ii) any cultivar, variety, strain, derivative, hybrid or fertile version of any indigenous species or of any animals, plants or other organisms referred to in subparagraph (i); and*
- (iii) any exotic animals, plants or other organisms, whether gathered from the wild or accessed from any other source which, through the use of biotechnology, have been*

altered with any genetic material or chemical compound found in any indigenous species or any animals, plants or other organisms referred to in subparagraph (i) or (ii); but

(b) *excludes—*

(i) *genetic material of human origin;*

(ii) *any exotic animals, plants or other organisms, other than exotic animals, plants or other organisms referred to in paragraph (a)(iii); and*

(iii) *indigenous biological resources listed in terms of the International Treaty on Plant Genetic Resources for Food and Agriculture.*

Section 80 (1) clearly states the aim of the Biodiversity Act and that is to regulate the act of bioprospecting (and thus prevent biopiracy) and to ensure the equitable distribution of the resultant benefits. What is of interest is that exotic plants are excluded and thus ethno-biological knowledge pertaining to same is outside of the ambit of this legislation. This provision is one born out of necessity as the South African Government has no jurisdiction over matters that falls outside of its territorial ambit and rights pertaining to sovereignty. The legislature thus has no authority in terms of international law to regulate matters pertaining to other countries. I thus submit that this legal conundrum (to which there is no effective legal remedy, save for private contract) makes the Biodiversity Act largely irrelevant to the San. Why? Whist San resident within the Republic shall have their ethno-biological knowledge protected in terms of the Biodiversity Act, the majority of the San are resident in Namibia and Botswana and thus fall outside of its ambit²⁶. A *Monsanto* or *Pfizer* undertaking a bioprospecting mission would thus simply have to send their teams of scientists to either Namibia or Botswana and would be free to exploit the ethno-biological knowledge of San at their leisure. The Biodiversity Act (at Section 49(1)(b)) refers to the Act also being applicable to "*human activity affecting South Africa's biological activity and its components*". I suggest that the intention here was to give the State scope to make extra-territorial actions but in practice would be largely ineffective as the State would either have to rely on a treaty or an internationally vesting right i.e. international patents and copyrights. There is

²⁶ Chennels 2003: pp 10 – there being 55 000 San in Botswana, 35 000 in Namibia, 7 000 in South Africa and approximately 8 000 between Angola, Zambia and Botswana

currently no legislation or administrative initiatives (at government level) to replicate these proposed protection in either of Namibia or Botswana. I submit that the solution is to have a range of legislation amongst the Southern Africa Development Community ("SADC") which mirrors the provisions of the Biodiversity Act, the primary beneficiary of that would be the San. Having said that, the Biodiversity Act is of great importance to traditional peoples resident solely in South Africa (Zulus, Xhosa etc.) and the biodiversity of that country.

The recent enactment of the Traditional Health Practitioners Act, (unnumbered) of 2004²⁷, whereby traditional healers are to be regarded as performing a professional medical service when patients consult with them and thus deserving of falling under the different medical aid regimes, formalises the role of persons who in the past were ignorantly called 'witchdoctors' but who in effect perform valuable and effective, albeit non-Western, medical services to their patients. They will be, in terms of the legislation be denied the right to make diagnosis or treat terminal patients. The enactment of this legislation adds another level to the recognition of traditional / indigenous knowledge and adds an important arrow to the armory of anyone wanting to protect the rights of the holders of that knowledge, as much of it will actually vest in the ranks of traditional healers and the formalisation of their status will make the establishment of their *locus standi vis á vis* traditional knowledge easier to prove but by no means a given. Because the Biodiversity Act is not retroactive (and in terms of public policy rightfully so), acts of biopiracy that occurred prior to the enactment of the Biodiversity Act remain relatively untouchable and this is largely a function of the weakness of the application of intellectual property laws to indigenous knowledge. For example, the plant *Pelargonium Sidoides* has been used in the Western world for the last century or so for its bacteriological / anti-biotic type effects. It was 'discovered' by an Englishman called Stevens in the late 19th century, who was cured of tuberculosis by a traditional healer but was unable to substantiate why. Later, German researchers tracked the plant to KwaZulu Natal and traced its local usage in traditional medicine through conversations with Zulu healers, farming families, Indian traders and doctors at local hospitals. The remedy is now grown and produced in Germany (for the last forty years or so) under the name 'Umcklalabo'²⁸. This sort of bioprospecting (bordering on biopiracy) would

²⁷ *Traditional Healers Enjoy New Status* at www.news24.com on 10 September 2004

²⁸ '*Pelargonium Sidoides* – Trust a local plant to thwart respiratory tract infections this winter' in *Natural Medicine The South African Journal of Natural Medicine*. Winter 2004. No author given or page number

now be regulated and thus forbidden under the Biodiversity Act but those that have already gone through the door, so to speak are lost forever and South Africa and its peoples have no commercial 'claw back' at all. The only positive is that the remedy is not patented and is able to be replicated here. I have no information whether the name 'Umcklalabo' is trademarked or not. The only real legal remedy regarding this problem would be for a South African entity like the Council for Scientific and Industrial Research ("CSIR") to explore the patenting of one of the extraction methodologies concerning the essential ingredients of the remedy but that would need to satisfy the formal requirements of a patent, as discussed below.

The Biodiversity Act forces those who wish to engage in bioprospecting to seek a permit from the Department of Environmental Affairs and Tourism ~

"Permits

81. (1) No person may, without a permit issued in terms of Chapter 7—

(a) engage in bioprospecting involving any indigenous biological resources; or

(b) export from the Republic any indigenous biological resources for the purpose of bioprospecting or any other kind of research.

(2) Before any application for a permit referred to in subsection (1) may be considered by a relevant issuing authority, the applicant must at the request of the issuing authority, disclose to the issuing authority all information concerning the proposed bioprospecting and the indigenous biological resources to be used for such bioprospecting that is relevant for a proper consideration of the application"

Before the above mentioned permit is issued, the applicant needs to satisfy the issued authority that it meets the benefit sharing and knowledge transfer requirements, as required in terms of Article 8 (j) of the Convention on Biodiversity and as mirrored in the Biodiversity Act ~

"Certain interests to be protected before permits are issued

82. (1) Before a permit referred to in section 81(1)(a) or (b) is issued, the issuing authority considering the application for the permit must in accordance with this section protect any interests any of the following stakeholders may have in the proposed bioprospecting project:

(a) A person, including any organ of state or community, providing or giving access to the indigenous biological resources to which the application relates; and

(b) an indigenous community—

(i) whose traditional uses of the indigenous biological resources to which the application relates have initiated or will contribute to or form part of the proposed bioprospecting; or

(ii) whose knowledge of or discoveries about the indigenous biological resources to which the application relates are to be used for the proposed bioprospecting.

(2) If a stakeholder has an interest as set out in subsection (1)(a), an issuing authority may issue a permit only if—

(a) the applicant has disclosed all material information relating to the relevant bioprospecting to the stakeholder and on the basis of that disclosure has obtained the prior consent of the stakeholder for the provision of or access to such resources;

(b) the applicant and the stakeholder have entered into—

(i) a material transfer agreement that regulates the provision of or access to such resources; and

(ii) a benefit-sharing agreement that provides for sharing by the stakeholder in any future benefits that may be derived from the relevant bioprospecting; and

(c) the Minister has in terms of sections 83(2) and 84(2) approved such benefit-sharing and material transfer agreements.

(3) If a stakeholder has an interest as set out in subsection (1)(b), an issuing authority may issue a permit only if—

- (a) the applicant has disclosed all material information relating to the relevant bioprospecting to the stakeholder and on the basis of that disclosure has obtained the prior consent of the stakeholder to use any of the stakeholder's knowledge of or discoveries about the indigenous biological resources for the proposed bioprospecting;*
- (b) the applicant and the stakeholder have entered into a benefit-sharing agreement that provides for sharing by the stakeholder in any future benefits that may be derived from the relevant bioprospecting; and*
- (c) the Minister has in terms of section 83(2) approved such benefit-sharing agreement.*
- (4) An issuing authority—*
 - (a) may engage the applicant and stakeholder on the terms and conditions of a benefit-sharing or material transfer agreement;*
 - (b) may facilitate negotiations between the applicant and stakeholder and ensure that those negotiations are conducted on an equal footing;*
 - (c) on request by the Minister, must ensure that any benefit-sharing arrangement agreed upon between the applicant and stakeholder is fair and equitable;*
 - (d) may make recommendations to the Minister; and*
 - (e) must perform any other functions that may be prescribed.*

For me the key elements here are that the issuing authority will only issue the permit if the bioprospector shows that the relevant stakeholder i.e. the holder of traditional ethnobiological knowledge in terms of Section 80(1)(b)(ii) has given its *prior informed consent* to such activity and has entered into both a benefit-sharing and material transfer agreements, the terms of which must be to the satisfaction of the Minister. The Minister (through the offices of his/her department) is then authorised but not compelled to assist the bioprospector and stakeholder (the holders of the traditional knowledge) in the effecting of the relevant contracts and commercial negotiations.

I believe that the process envisaged by the Biodiversity Act has the following strengths and weaknesses ~

Strengths

1. The bioprospecting process is now formalised with serious implications for those that choose to ignore it (see penalties below);
2. It satisfies the requirements of the Convention on Biodiversity insofar as prior informed consent goes and regarding knowledge transfer and benefit sharing agreements; and
3. The State *may* assist indigent peoples in enforcing and protecting their rights.

Weaknesses

1. It is not retroactive (though it never can be). It is a weakness that must simply be lived with;
2. It is confined to the borders of the Republic and that makes it largely ineffective *vis á vis* the San;
3. It does not *per se* deal with the intellectual property rights of the holders of traditional knowledge and presumes some sort of legislative activity to cover manage that issue. I deal with this in more detail below, especially considering that it may be extremely hard to pinpoint who the actual holders of that knowledge are or were;
4. The Biodiversity Act is well structured and technically sound. However, it is to be implemented against the background of a developing third world nation and as a commercial lawyer in private practice I am afraid to say that the reams of post-1994 legislation produced by our first democratic government are based on good intentions but are often poorly implemented and/or enforced. Quite frankly, in a nation staggering under the burdens of poverty, lawlessness and an HIV/AIDS epidemic, environmental issues and the subtle aspects of intellectual property rights impacting on traditional knowledge are quite marginal, largely then concern

of academics, concerned professionals, NGO's and environmentalists who understand the real value of this *fifth element* and the other more tangible aspects of the environment. For example, the cycad is protected in terms of South African endangered species legislation and policy, yet the last few years have seen a massive depletion of the numbers of this protected resource, largely by poachers who know that they can fetch around US\$ 20,000 for each specimen sold overseas. The thefts are not restricted to cycads but include tortoises, lizards, snakes, spiders, dung beetles, birds, butterflies, aloes and ferns. It is estimated that the illegal trade in plants and animals is the third largest illegal activity in the world, after the arms and drug trades.²⁹ Locals are also guilty of plundering local resources for 'muti' purposes. Paul Gildenhuis of the Western Cape Nature Conservation Board describes these thieves as 'vacuum cleaners' who are well equipped with maps, global positioning satellite (GPS) equipment and specialised reference books. A truck was recently stopped with 90 000 stolen proteas on board!³⁰ The problem is thus not one of legislative weakness or lack of executive will but one typical of a developing nation, one of a lack of resources to implement the good intentions of the legislature. This specific problem and one that will hopefully be effective in the enforcement of the terms of the Biodiversity Act is the creation of the so-called 'Green Scorpions' whose establishment was announced by the current Minister of the Environment, Martinus van Schalkwyk and whose job it shall be to police and prepare cases against those who break the laws relating to the environment³¹. Without being cynical but perhaps tainted by what is seen in commercial practice, I hope that the implementation of the Biodiversity Act will be real, forceful and effective, thus avoiding the following apt adage "the road to hell is paved with good intentions." Africa as a whole (including the OAU Charter) and South Africa in particular has reams of 'good' legislation and well worked policies. They are only pieces of paper and are only as good as the enforcement thereof.

The Biodiversity Act gives flesh to the requirement for there to be benefit sharing agreements between bioprospector's and the relevant stakeholders, as follows in Section 83 ~

²⁹ *Thieves are Plundering Our Heritage* Report by Melissa Wray in the Pretoria News on July 19, 2004

³⁰ Ibid..

³¹ *SA to get 'Green Scorpions'* Report by Wolfram Zwecker at www.news24.com on 6 September 2004

“Benefit-sharing agreements

83. (1) A benefit-sharing agreement must—

(a) be in a prescribed format;

(b) specify—

(i) the type of indigenous biological resources to which the relevant bioprospecting relates;

(ii) the area or source from which the indigenous biological resources are to be collected or obtained;

(iii) the quantity of indigenous biological resources that is to be collected or obtained;

(iv) any traditional uses of the indigenous biological resources by an indigenous community; and

(iv) the present potential uses of the indigenous biological resources;

(c) name the parties to the benefit-sharing agreement;

(d) set out the manner in which and the extent to which the indigenous biological resources are to be utilised or exploited for purposes of such bioprospecting;

(e) set out the manner in which and the extent to which the stakeholder will share in any benefits that may arise from such bioprospecting;

(f) provide for a regular review of the agreement by the parties as the bioprospecting progresses; and

(g) comply with any other matters that may be prescribed.

(2) A benefit-sharing agreement or any amendment to such an agreement—

(a) must be submitted to the Minister for approval; and

(b) does not take effect unless approved by the Minister.

Perhaps the most controversial element here is that Section 83(1)(e) refers to the bioprospector having to set out the manner in which a stakeholder will receive remuneration. The language used is not peremptory in the sense that it does not force a benefit sharing agreement to provide for remuneration (whether in the form of money, skills transfer or developmental targets) to be made. I can only presume that intention of the legislature was to allow this aspect to be flexible in the sense that it is presumed that the Minister shall only sign off on a benefit sharing agreement if he/she is satisfied that the counterparts who are traditional peoples receive the appropriate benefits. I suggest, that if used correctly (and we shall see the in the *Hoodia* settlement where the commercial outcome is at first glance unsatisfactory insofar as the San are concerned but that in an objective commercial sense is probably satisfactory, that certainly is the view of the negotiating attorney, Roger Chennels³²) this mechanism will be the true commercial validator of this whole process. I believe that the State will not really benefit directly as most bioprospectors are domiciled offshore and thus their commercial benefits will benefit the fiscus and tax base of those particular countries and not those of South Africa (we have a residence based taxation system). Where South Africa will see real, tangible commercial benefits will be in terms of relief on the fiscus that the funds that will flow, hopefully on an annuity type basis, into the Bioprospecting Trust Fund, thus alleviating the need to use funds collected from the taxpayer and thus freeing them up to be used elsewhere.

The Biodiversity Act deals with the requisite material transfer agreements as follows, at Section 84 ~

“Material transfer agreements

84. (1) A material transfer agreement must—

(a) be in a prescribed format;

(b) specify—

³² Conversations with Roger Chennels

- (i) particulars of the provider, and the exporter or recipient, of the indigenous biological resources;*
- (ii) the type of indigenous biological resources to be provided or to be given access to;*
- (iii) the area or source from which the indigenous biological resources are to be collected, obtained or provided;*
- (iv) the quantity of indigenous biological resources that is to be provided, collected, obtained or exported;*
- (v) the purpose for which such indigenous biological resources are to be exported;*
- (vi) the present potential uses of the indigenous biological resources; and*
- (vii) conditions under which the recipient may provide any such indigenous biological resources, or their progeny, to a third party.*

(2) A material transfer agreement or any amendment to such an agreement—

(a) must be submitted to the Minister for approval; and

(b) does not take effect unless approved by the Minister.”

Once again we see the importance of Ministerial oversight and it is satisfying that this will be dealt with at ministerial level and not departmental level.

Perhaps the most significant area insofar as the commercial thrust of this legislation is the establishment of the Bioprospecting Trust Fund, as described below. The Act makes it compulsory for monies received to be paid into this trust fund and thus the Trust fund established as the recipient and distributor of funds received in terms of the *Hoodia* settlement would have been illegal. The Act is not retroactive and that structure and others will, presumably, remain intact. I believe the failure to allow contracting parties to establish their own trust funds, with departmental oversight is a major flaw in this legislation and that may well hinder the commercial efficacy of its practical implementation and roll-out. In South Africa we have seen numerous failures of government departments to utilise funds that have been trusted to their care e.g. the Eastern Cape Government where a massive forensic audit is taking place and the Lotto organization which has been accused of not distributing funds at a pace that satisfies the most needy charitable organisations. My criticism is that I believe that the contracting parties and primarily the receiving stakeholder should control the utilisation of funds received, under the following conditions ~

1. The stakeholder must be a formally established with a constitution (whether it be a Section 21 company or other association) i.e. WIMSA;
2. The Trust Deed must be pre-approved by the Department of Environmental Affairs and Tourism;
3. The Trust must have as trustees two independent professionals (not associated with each other); and
4. The Trust must be fully audited by a firm of independent auditors appointed jointly by the trustees and the Department of Environmental Affairs and Tourism on an annual basis (in terms of South African law it is not compulsory that a trust be audited³³) and a copy of audited financials must be submitted to that department or which ever body oversees the Trust's finances i.e. the Office of the Auditor General, on an annual basis.

“Establishment of Bioprospecting Trust Fund

85. (1) A Bioprospecting Trust Fund is established into which all moneys arising from benefit-sharing agreements and material transfer agreements, and due to stakeholders, must be paid, and from which all payments to, or for the benefit of, stakeholders must be made.

(2) All money paid into the bioprospecting trust fund is trust money within the meaning of section 13(1)(f)(ii) of the Public Finance Management Act.

(3) The Director-General—

(a) must manage the Fund in the prescribed manner; and

(b) is accountable for the money in the Fund in terms of the Public Finance Management Act.

The following penalties and jail sentences are prescribed and appear good in theory but I hope that they are not to be applied in the same way as the provisions of Section

³³ Honoré 2002: pp 331-332

424 of the Companies Act³⁴ are applied. That provision allows shareholders to attack directors of a company who trade recklessly or fraudulently and hold them personally liable for the debts of a company (thus piercing “the corporate veil”). They read well in the act and are beautifully explained in textbooks but are worth little in practice, largely because of the heavy onuses of proof. Along with Minister van Schalkwyk’s ‘Green Scorpions’ I sincerely hope that the Department of Environmental Affairs and Tourism rigorously prosecutes this Act, at all relevant civil and criminal levels, with requisite funds and professional expertise. The nature of the information being protected is that once it is exploited or amended or protected elsewhere under one of the intellectual protection regimes, it will be almost impossible to return. The penalties are contained in Section 102 ~

“Penalties

102. (1) A person convicted of an offence in terms of section 101 is liable to a fine, or to imprisonment for a period not exceeding five years, or to both fine and such imprisonment.

(2) A fine in terms of subsection (1) may not exceed—

(a) an amount prescribed in terms of the Adjustment of Fines Act, 1991 (Act No.101 of 1991);

or

(b) if a person is convicted of an offence involving a specimen of a listed threatened or protected species, an amount determined in terms of paragraph (a) or which is equal to three times the commercial value of the specimen irrespective of which the offence was committed, whichever is the greater.”

3.2 The South African Legal Regime Concerning Intellectual Property Rights (“IPR’s”) and Ethno-Biological Knowledge

(Note: The topic of this paragraph 2.5 is an enormous one in itself and I am only attempting to summarise the current *status quo* in this regard³⁵).

³⁴ Act 61 of 1973

³⁵ Please see Glazewski & Witbooi 2001 for a very detailed analysis of this topic

The South African legal regime has currently has no legislation or common law that protects or manages 'ownership' of ethno-biological knowledge.³⁶ The Biodiversity Act makes certain presumptions about the 'holders' of such knowledge, yet gives no indication of how that is to be regulated. The latter Act thus does not amend the current status of IPR's.

The following specific IPR's are recognised in South African law ~

1. Patents

The Patents Act regulates the issuing of patents³⁷. Patents are rights granted to an inventor, for a limited time, to exclude all others from making, using, selling and/or importing the patented process, or invention into that particular state's jurisdiction³⁸. They create so-called absolute whereby the holder thereof can exercise his/her rights of ownership against anyone within the jurisdiction for which the patent is granted. The key elements of the invention are: nonobviousness, novelty and usefulness³⁹. Patents are typically used for the protection of 'inventions' but are now applicable to 'discoveries', in terms of the heavily contested article 27.3 b of the TRIPS Agreement of the World Trade Organisation⁴⁰ whereby private property rights are now legitimised over life and processes entailed in modifying life forms⁴¹. South Africa has however precluded the registration of patents over living organisms and also disallows the patenting of 'any essentially biological process' for the production of animals (unless it is a micro-biological process)⁴².

The use of patents to gain ownership over biological resources is deemed by many to be an extension of colonial practices where lands were 'discovered' and were regarded

³⁶ Glazewski & Witbooi 2001: pp 19

³⁷ No. 57 of 1978

³⁸ Stephenson 2003 : pp 32 quoting Dorr and Munch

³⁹ Ibid.

⁴⁰ General Agreement of Tariffs and Trade: Multilateral Trade Negotiations Final Act Embodying the Uruguay Round of Trade Negotiations, April 15, 1994

⁴¹ Chennels 2003: pp 5

⁴² Section 25(4)(b) of the Patents Act

as *terra nullius*, empty of people and ideas⁴³. Vandana Shiva explains it as follows: “The ‘enclosure’ of biodiversity and knowledge is the final step in a series of enclosures that began with the rise of colonialism. Land and forests were the first to be ‘enclosed’ through dams, groundwater mining and privatisation schemes. Now it is the turn of biodiversity to be enclosed by IPR’s”⁴⁴. There is currently a fierce debate raging at WTO / GATT meetings and forums and in many respects is a function of ‘globalisation’ v. ‘tribalism’ or ‘McWorld’ v. ‘Jihad’ and is based on the strong criticism of scientists as ‘creators’ and ‘inventors’ when they are in fact ‘discoverers’. This deadlock and confrontation is evidence of a crisis of legitimacy that affects the WTO⁴⁵ and in fact the entire IPR system. The following statement by the Indigenous Peoples Caucus at the WTO meeting in Seattle in 1999 summarises the position of the indigenous people’s movement: “The theft and patenting of our genetic resources is facilitated by the TRIPS of the WTO. Some plants which Indigenous Peoples have discovered, cultivated and used for food, medicine and sacred rituals are already patented in the United States, Japan and Europe. A few examples of these are ayahuasca, quinoa, and sangre de drago in forests of South America, kava in the Pacific, tumeric and bitter melon in Asia. Our access and control over our traditional knowledge and intellectual heritage are threatened by the TRIPS Agreement⁴⁶.” The underlined plants patented were successfully challenged as follows ~

- Ayahuasca – a ceremonial drink used for centuries by the indigenous tribes of the Amazonian Basin to treat illnesses, successfully patented by a US citizen, claiming his patent to be ‘new and unique’. The US PTO rejected the patent claim when tribal leaders claimed the use to not be novel;
- Bolivian quinoa – a staple food crop of the indigenous peoples of Chile, Bolivia, Peru and Ecuador, successfully patented by two scientists from Colorado State University. The patent was abandoned by the University after pressure from indigenous groups; and

⁴³ Ibid. pp 4

⁴⁴ Shiva 2001: pp 44

⁴⁵ Chennels 2003: pp 5

⁴⁶ Ibid. p6

- Turmeric - A US patent was granted to two expatriate Indians for the method of administration of turmeric for wound healing purposes. The Indian CSIR challenged this, claiming that this method had been used for thousand of years and was thus not novel.⁴⁷

Had the CSIR and the San not commercially co-operated, I believe that a similar remedy would have been available to the San. The battle would have been a more complex one as the CSIR patented the extraction and reproduction method concerning P57 and Hoodia and not the actual use hereof, though they are inextricably linked. I cannot call whether the san would have succeeded or failed but what is certain is that they would have stalled the processed until clarity was reached in court.

2. Copyright

Copyright is a right, which vests in the author of an original work, enabling him/her to prevent unauthorised copying of that work and it is applicable to works that are expressed in tangible form, yet does not protect the underlying ideas⁴⁸. This is regulated in terms of South African law by the Copyright Act⁴⁹.

This aspect of IPR's is not directly relevant to the IPR's of indigenous peoples as their knowledge is currently not protected by any current system. The value of copyright is if that knowledge is codified or compiled in a database in the sense that that 'work' can be protected but the copyright will vest in the actual compilers thereof and not the source of the data i.e. indigenous peoples. Furthermore, once the data is so captured, it is 'freely usable' within the confines of the relevant copyright. This a double-edged sword, the negative in the sense mentioned above and in the positive, if the codification is orchestrated with the intention of codifying or cataloguing the relevant knowledge for the protection of such knowledge on behalf of indigenous peoples, I believe this to be a very useful tool, more about this later in Part 6 below.

3. Trade Secrets

⁴⁷ All sourced Ibid.

⁴⁸ Glazewski & Witbooi 2001: pp 29

⁴⁹ Act 98 of 1978

The law of trade secrets aims to prevent the disclosure or use of confidential or secret information or materials in a manner contrary to honest commercial practice⁵⁰. Trade secrets do not need to be registered and are notoriously difficult to enforce and I believe that their true use in the South African context would probably be to protect traditional healers who sell knowledge and whose practices and methods are copied without their permission. For largely indigent peoples like the San, this IPR is probably of little practical use.

4. Plant Breeders Rights ("PBR's")

PBR's (recognised internationally in terms of International Union for the Protection of New Plants Varieties) were developed to fill the gap in the Patents Act whereby living species cannot be patented and are regulated in South Africa in terms of the Plant Breeders Rights Act⁵¹. As the name suggests, this legislation protects the rights of those who cross breed plants to create a new sub-species, the commercial intention being to encourage researchers and breeders to spend time and money on research and development knowing that the new breed can thus be registered and protected pending further commercial exploitation.

PBR's are probably of little commercial value, in their current form, to indigenous peoples, as ethno-biological knowledge is based upon plant life (amongst others) as found in the wild and that have not been subjected to genetic engineering. This IPR is thus of little use in protecting ethno-biological knowledge.

3.3 Indigenous Peoples IPR issues in International Law

The Convention on Biodiversity, in the famous article 8 (j)⁵² calls on government to "*respect, preserve and maintain the innovations and practices of indigenous and local communities*".

⁵⁰ Glazewski & Witbooi 2001: pp 29

⁵¹ No. 15 of 1976

⁵² Quoted in full at Part 2.1 above

Article 6 of the International Labour Organisation Convention 169, the most binding international agreement with regards indigenous people's rights, requires parties to consult with indigenous people's⁵³ "... whenever consideration is being given to legislative or administrative measure which might affect them directly" and further in article 5.1, where member states are required to "recognise and protect their social, cultural, religious and spiritual values and practices" and further in Article 8.2 "respect the social importance for the cultures and spiritual values of the peoples concerned of their relationships with the lands and territories they occupy or otherwise use and in particular, the collective aspects of this relationship."

Article 29 of the United Nations Draft Declaration on the Rights of Indigenous Peoples states "Indigenous Peoples have the right to own and control their cultural an intellectual property. They have then right to special measures to control and develop their sciences, technologies, seeds, medicines, knowledge of flora and fauna, oral traditions, designer, arts and performances."

The 1998 declaration of Belém was also an important milestone in the quest of indigenous peoples to have their ethno-biological rights protected as this declaration recognised the inextricable link between the preservation of cultural and biological diversity⁵⁴

3.4 Current South African Government Policy Directions

The South African government departments have the following policies in place regarding ethno-biological knowledge (these policies are not mutually exclusive and often overlap and in that case one has to presume hat there will be inter-departmental co-operation) ~

Department of Environmental Affairs and Tourism ("DEAT")

The DEAT is the Department managing the implementation of the Biodiversity Act and shall manage the creation of the South African National Biodiversity Institute. It is also obviously concerned with the greater scheme of environmental issues within South

⁵³ Chennels 2003: pp 6

⁵⁴ Stephenson 2003: pp 18

Africa, the newest addition being the creation of the 'Green Scorpions' and the most pressing issues probably being the stripping of South Africa's physical environmental resources and the more hidden aspect of biopiracy.

Department of Health

This Department has taken a great interest in the field of traditional medicine, primarily in the form of using indigenous plants for their medicinal properties and facilitating the commercialisation thereof. The Biodiversity Act will also apply to these endeavours.

This Department has established a National Reference Centre for African Traditional Medicine in conjunction with the CSIR, who are attempting to implement Good Manufacturing Practices concerning the cultivation and production of traditional medicines and the plants from which they come. It will investigate the medicinal properties of plants like the *Hoodia* (appetite suppressant) and *African Potato* (used as a viral inhibitor in HIV positive persons). This is a virtual centre in the sense that it consists of databases and Internet sources⁵⁵. The Minister of Health is currently appointing a management Board but this is not yet finalised. The objectives of this Reference Centre will be to ~

- (a) foster areas of research and development regarding African traditional medicine apparently, the department is faced with a catch-22 situation here as traditional healers often will not release their information until protection of their IPR's can be guaranteed but the IPR regime is not finalised and probably won't be for a while);
- (b) research legal issues regarding intellectual property rights and is working hand-in-hand with the Medical Research Council on this issue and its Indigenous Knowledge Health Office; and
- (c) attempt to manage the issue of 'ownership' of indigenous knowledge⁵⁶.

Department of Science and Technology ("DST")

⁵⁵ Telephone conversation with Dr. Dixon Lentswana of the Department of Health, 9 September 2004

⁵⁶ Ibid.

The DST is at the forefront of research into the topic of this dissertation. There is currently a National Policy on Indigenous Knowledge Systems⁵⁷ but the DST has informed me that an updated one has replaced this policy and that is currently before Cabinet for approval⁵⁸. As this new policy is embargoed i.e. not open for public consumption, I am going to summarise the salient points of the earlier policy and this gives an idea of the thrust of the DST's policy on indigenous knowledge systems (I have kept the summary short because though this document gives valuable background on indigenous knowledge and was thus invaluable in research, it is not a current policy document and the DST's thinking may well have changed) ~

1. The aim is to protect local communities who are “knowledge rich but economically poor”;
2. Protect the above from biopiracy and therefore develop a policy for protecting, developing and promoting indigenous knowledge systems, with a strong emphasis on empowerment and good governance;
3. The policy examines the international legal regime that supports this endeavour in South Africa and examines same from an African cosmological context;
4. It also examines the role of globalisation and western intellectual property systems and their affect on non-Western peoples and systems, acknowledging the weakness in the current South African intellectual property regime (“IPR”); and
5. It suggests *sui generis* legislation to plug the gap in the existing IPR regime, with accompanying administrative and judicial review processes.

The DST also published a Draft Recognition, Promotion, Development and Protection of Indigenous Knowledge Systems Bill⁵⁹. This Bill never went before Parliament and I understand is redundant, until the new Policy is approved and is thus only mentioned

⁵⁷ Dated June 2001 and issued under the auspices of the old Department of Arts, Culture, Science and Technology

⁵⁸ Telephone conversation with Mr. Tom Suchandan of the DST on 8 September 2004

⁵⁹ Dated June 2001 and issued under the auspices of the old Department of Arts, Culture, Science and Technology

here for notice purposes.⁶⁰ The then Minister of Arts, Culture, Science and Technology announced in a speech on 24 May 2004 (the date of the signing of the Benefit Sharing Agreement between the San and the CSIR) that legislation would be released in June 2003 that would regulate the IPR's of communities and indigenous peoples and would be the country's first legislation regarding indigenous knowledge systems⁶¹. This is yet to happen.

4. ETHNO-BIOLOGICAL KNOWLEDGE

4.1 Who are Indigenous Peoples?

The International Labour Organisation Convention on Indigenous and Tribal peoples defines indigenous peoples at Article 1 as ⁶²

“Peoples in independent countries who are regarded as indigenous on account of their descent from populations which inhabited the country, or geographical region to which the country belongs, at the time of conquest or colonisation or the establishment of present state boundaries and who irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions”

The four key elements of this definition are⁶³:

1. time;
2. geographical space;
3. resilience; and
4. territorial occupation.

⁶⁰ Telephone conversation with Mr. Tom Suchandan of the DST on 8 September 2004

⁶¹ Speech: Dr. Ben Ngubane, 24 March 2003

⁶² Article 1, International Labour Organisation Convention on Indigenous and Tribal peoples in Independent Countries. June 1998 (referred to as 'Convention 169')

⁶³ Draft National Policy on Indigenous Knowledge Systems, Department of Arts, Culture, Science and Technology, Government of RSA, June 2001 (Embargoed)

The following quote illustrates the theoretical problems associated with defining an Indigenous people, not least because of the typical large scale disturbances of their life styles and domiciles because of the forces of either industrial 'progress' or colonisation:

*"It has been estimated that there are 5,290 groups of Indigenous peoples in the world totalling 357,000,000 people. Many commentators have argued that these groups that have been identified as Indigenous peoples are the single most disadvantaged set of populations in the world today. Because many Indigenous peoples have been forcibly removed from their traditional homelands and may even be arrested for trespassing on them to hunt, fish or gather for subsistence, many of them no longer live in a coherent community."*⁶⁴

Mugabe⁶⁴ defines indigenous peoples as *"those who hold an unwritten corpus of long-standing customs, beliefs, rituals and practices that have been handed down from previous generations."* He therefore states that indigenous peoples do not have to have claim of prior territorial occupancy with regards to their current territorial abode, as they may be recent immigrants, victims of forced labour, victims of forced removals or slavery. It is this definition of Mugabe's that I believe is most suitable for the definition of indigenous peoples in this paper as the territorial element of the San's claim to be an indigenous people is probably the most tenuous, as a result of the pressures exerted upon them by first the Bantu peoples from central and south-eastern Africa and thereafter the European colonials and settlers. Having said that, the choice of Mugabe's definition is not one of convenience but deference to the fact that history has shown us that the one aspect of an indigenous people's life that disappears first in the face of external pressures (usually colonisation) and that is territory. The San were and are no exception and one only has to examine contemporary media to see the fairly wide coverage being given to the San and their lands claims. For the purposes of this dissertation we will presume that the San have been deprived of their land yet remain an indigenous people based on their – *"unwritten corpus of long-standing customs, beliefs, rituals and practices that have been handed down from previous generations."* In fact, the IUCN Inter-Commission Task Force on Indigenous People's states that *"cultures are dying out faster than the people associated with them. It has been estimated that half of the world's – the storehouses of peoples heritages and the framework for their unique understanding of life – will disappear within a century."* The task force holds that the main

⁶⁴ Stephenson 1997: pp176

⁶⁴ Mugabe 1999: pp 99

threats to indigenous peoples include genocide, uncontrolled frontier aggression, military intimidation, extension of government control, unjust land policies and inappropriate conservation management⁶⁵. This list is a chilling one and sadly has applied in almost each instance to the San over the last 1700 years.

The focus in this dissertation is the San as a true *first people* or *indigenous people* but obviously other peoples in South Africa, like the Zulu, Sotho, Xhosa etc are also traditional peoples and also arguably indigenous peoples. That debate falls outside of the ambit of this dissertation

4.2 The World-Wide Indigenous People's Movement

As we saw in the discussion on the legal aspects of ethno-biological knowledge in Pat 3 above, its history is a very recent one. The same applies to the worldwide indigenous people's movement. Since the mid-1970's international political alliances began to be formed supported by the work of intellectuals, researchers and NGO's and the many scholarly and theoretical articles produced by them. The first real concrete event was the 1977 *International NGO Conference on Discrimination against Indigenous Peoples*⁶⁶. This and other conferences and dialogs that followed raised the international visibility of this movement and attempted to give some meaning and authority to discussions on indigenous peoples as distinct human communities with distinct political and legal institutions with entitlement to land, resources and protection of their cultural heritage and intellectual property⁶⁷. Some more impetus was gained by the United Nations declaring 1993 to be the *International year of the World's Indigenous Peoples* and 1995-2004 the *International Decade of the World's Indigenous Peoples*. The result of these writings and events is an upgraded international awareness that indigenous peoples and their lifestyles, customs, practices and knowledge are a separate corpus of cultural and legal regimes that deserve and warrant the universal protections, rights and obligations that attracted by similar groupings of people, whether it be nation states or ethnic groupings.

⁶⁵ Dutfield 1999: pp 1

⁶⁶ Hodgson 2002: pp 1040

⁶⁷ Ibid.

One of the problems facing the San and their interaction with the indigenous peoples movement is the apparent lack of intellectual leadership (as opposed to moral or physical leadership), this is summed up by Hodgson as: "*Although the situations of San and Pan-Mayan intellectuals differs from each other in many respects, they are intimately connected through co-participation in international forums and conferences on Indigenous peoples. They also participate in common donor circuits and academic and NGO networks. However, unlike the Mayan case, the hypermarginalised San do not yet have their own university-trained linguists and public intellectuals who are able to engage on equal terms in public debate with their critics.*" I can only agree with him yet have to elaborate that the emphasis on the intellectual capacity of the San is that as understood by the definition of Western intellectual capacity and commercial discourse, one we know to have scant regard for information that does not emanate from an established university or accredited researcher, this being a dominant sub-theme of this dissertation.

One of the more fascinating aspects of the themes surrounding the exploitation of indigenous knowledge and the formal protection thereof and the growing awareness and protections being afforded its holders is the increasing importance of globalisation. Globalisation is the attempt by the sophisticated economies of the world (predominantly those of the First World) and the large multi-national corporations (many of whom have economies the size of small countries or large cities) to globalise the world's economy and remove all barriers to free trade, yet at the same time introduce more sophisticated trade laws and intellectual property laws⁶⁸. The advocates of globalisation can be said to be diametrically opposed to those who seek to protect the holders of indigenous knowledge as one of the driving forces of globalisation is the 'knowledge economy' and the enforcement of intellectual property rights is one of its key tenets. Barber's foresightful writings in *Jihad v. McWorld* deal with many of the issues of those who seek to protect themselves from the juggernaut of globalisation versus the powers that desire that very thing. As I write this dissertation, the hegemonic United States is in conflict in Iraq, Afghanistan and elsewhere against what appears to be fairly broad-based, albeit loosely organised, Islamic opponents. Whilst the geo-political reasons for these conflicts are complicated and fall outside of the realm of this dissertation, the title of Barber's work could not have been more prophetic and whilst he focuses on economic issues, I submit that war and economics cannot be separated and perhaps the conflict in the Middle east is a continuation of globalisation in another guise.

⁶⁸ Stephenson 2003 : pp 20

Stephenson tells us in his analyses of the San / *Hoodia* settlement that one of the major issues for the San was that they saw their struggle to assert their rights with regard to their particular indigenous knowledge could not be readily divorced from the larger themes of the larger struggle against globalisation as depicted in *Jihad v. McWorld*⁶⁹. Whilst I never directly interviewed members of the San in my research, I often came across a strong undercurrent amongst the San that their quest was not so much to secure financial gain in their quest to have their knowledge documented and protected but to secure the community-based sacredness of it, to secure it for the use of others in a fair and equitable way.

4.3 The San as an Indigenous People

The San are a people who probably can be described as having originated in the later Stone Age but can be clearly genetically traced to the origins of modern humanity.⁷⁰ They are, along with the Australian Aborigines the longest continuously living population in one location in the history of mankind⁷¹. They were indeed the original inhabitants of the African sub-continent and thus become an ideal subject for this paper as so much of the San's history is fraught with the perils faced by indigenous peoples world-wide.

To give some sort of scope to the San's origin as 'people' and not as 'a people', it should be kept in mind that in the first dawn of mankind, they may well have been 'the people', certainly in Africa. That is not a debate that needs to be pursued to vigorously here but a short examination of their origin will strongly emphasise any claim the San have as being an indigenous people of South Africa:

The Stone Age can be divided into three eras: (1) Earlier [2.5 million to 250 000 years A.D], (2) Middle [30 000 to 22 000 A.D] and (3) Later [22 000 to 5000 A.D].⁷² The famous caves in the Sterkfontein Valley in Gauteng, South Africa yielded fossils of the

⁶⁹ Ibid.

⁷⁰ Mountain 1999: pp 9

⁷¹ Stephenson 2003: pp 21 quoting Lee, Hitchcock and Biesele 2002: 9-12

⁷² Goodwin 1929

species *australopithecines*, known as the 'southern ape man'. This species qualified to be classed into the Earlier Stone Age because of its ability to fashion crude tools from stone. The *australopithecines* inhabitants of the Sterkfontien Valley lived side by side with another species called *Paranthropus*. The latter followed its own evolutionary path and genetic development and subsequently became extinct and the former developed into the sub-species, *Homo sapiens sapiens*⁷³, of which modern man remains a member. To illustrate the breathtaking numbers involved here and to place some perspective on something, which our modern minds may find hard to grasp, an analogy is useful. The 2004 years since *Anno Domini* are to the 2.5 million years of the provable existence of *australopithecines* what 80 centimetres are to one kilometre!

Whilst there is a large amount of proof surfacing of the long existence of men anatomically identical to modern man [anatomically modern footprints were made next to the Langebaan Lagoon 117 000 years ago⁷⁴] my emphasis here is on the Middle Stone Age. The reason is that we need, as lawyers, to draw lines in the sand because of the nature of causality i.e. we need to know: 'When did people who looked and behaved like the San wonder our subcontinent?' We have to ask this question because if the San are an indigenous people, the onus is on those asserting this to prove it. There is a debate in paleontological circles that the man of the Middle Stone Age may have looked like us but certainly did not act like us, so called 'modern in body but not in mind'⁷⁵ Others conclude that 'the Middle Stone Age people did think like us'⁷⁶ and exhibited aspects of modern society such as family foraging groups and certain types of food preparation. For us in South Africa, one of the most interesting finds was the renaming of a settlement in the Blombos Caves on the Southern Cape Coast. Here, modern humans were even creating artworks in the form of cosmetic and art-like markings on pieces of ochre. These artefacts are approximately 77 000 years old, 40 000 years earlier than the earliest such creation of items of a similar sophistication in Eurasia, a time when *Homo sapiens sapiens* did not exist in that part of the world but where *Neanderthal* man was the dominant species. There are other unequivocal

⁷³ Mountain 1999: p13

⁷⁴ *ibid.* p 15

⁷⁵ *ibid.* p 16

⁷⁶ Deacon 1999: pp 130

remains of the San's ancestors dated back to 120, 000 Bp that have been excavated outside Cape Town⁷⁷

The Later Stone Age in Southern Africa is characterised by the famous rock art of the San and more sophisticated tool making and hunting technologies. The paintings depict the colourful life of these nomadic hunter-gatherers and give valuable insights into the lives, customs and territorial extent of the San communities throughout Southern Africa. These art works (many of which still exist in their original form today) show us that the San lived for thousand of years as the sole occupants of Southern Africa in small nomadic groups as hunters and gatherers with a microlithic stone tool technology ⁷⁸. This means that, probably by 22 000 BP and no later than 10 000 BP, the San were a multiple, viable groupings of families, communities and individuals, that exhibited the characteristics of modern humans and thus can clearly satisfy our definition of an indigenous people as described in part 4.1 above, i.e. *“the San held an unwritten corpus of long-standing customs, beliefs, rituals and practices that have been handed down from previous generations.”* They were linguistically and genetically identical to the modern San. The San were thus and remain today an indigenous people within the territory of to South Africa and numerous other Southern African states.

About 8000 BP, anthropologists believe that genetically identical people to the San began to herd sheep and goats in what is today Botswana and eventually became seen as a different people, the “Khoi”, “KhoiKhoi” or the “Hottentots”. They lived alongside each other for millennia but their relationship *inter se* is not clear but the fact that they emanate from the same genetic stock is undisputed.⁷⁹

4.4 Indigenous Knowledge Systems and Ethno-Biological Knowledge

Indigenous knowledge has been defined by Brush as *“the systematic information that remains in the informal sector, usually unwritten and preserved in oral tradition rather than texts ... it is culture specific, whereas formal knowledge is decultured.”*⁸⁰ What is most

⁷⁷ Stephenson 2003: pp 21 quoting Lee, Hitchcock and Biesele 2002: 36

⁷⁸ Stephenson 2003: pp 21 quoting Lee, Hitchcock and Biesele 2002: 36

⁷⁹ Stephenson 2003 : pp 21

⁸⁰ Brush at page 1 of Mugabe 1999

significant about this definition is the clear link between 'knowledge' and 'culture', yet Mugabe criticises this view⁸¹ and in my opinion rightly so, for not mentioning the fact that indigenous knowledge is often formalised and should that happen, there is no reason why indigenous knowledge loses its initial character. In fact Brush's definition of indigenous knowledge be accepted by a court of law, it would provide a perfect loophole for a defendant lawyer by providing him with a defence whereby all he would have to prove was that such knowledge was formalised, regardless of where or when that happened. As we know, the Internet has become one massive data base (more correctly, millions of connected data bases) and the chances are that a particular piece of indigenous knowledge is somewhere on the Internet in one or other web site, thus limiting any protection that knowledge may have under international law. Mugabe also criticises this definition for focussing too much on information *per se* as opposed to practices and customs, which are quite often the vehicle that indigenous peoples use to convey that knowledge between generations.

The nature of indigenous knowledge goes much further than (a) knowledge *per se* (whether formalised or not) and (b) practices and customs but also has, very importantly, a sacred element. Greaves has summed this up very elegantly " ... *indigenous knowledge is, in the main, something more than matter-of-fact information. Rather, it is usually invested with a sacred quality and systemic unity, supplying the foundation on which members of a traditional culture sense their **communitas**, personal identity and ancestral anchorage* ⁸²."

A report submitted to the Secretariat on Biological Diversity by a Canadian indigenous peoples organisation called the Four Directions Council elaborates this important point about the acquisition and distribution of indigenous knowledge: "... *what is 'traditional' about traditional knowledge is not its antiquity but the way it is acquired and used. In other words the social process of learning and sharing knowledge, which is unique to each indigenous culture, lies at the very heart of its 'traditionality'. Much of this knowledge is actually quite new, but it has a social meaning and legal character, entirely unlike the knowledge indigenous people acquire from settlers and industrialised societies* ⁸³." What is important here is the emphasis upon verbal traditions and social character of the

⁸¹ Ibid. pp 4

⁸² Greaves 1999: pp 26

⁸³ Dutfield 1999 at pp 3, quoting the Four Directions Council (1996)

knowledge, with the emphasis upon knowledge as community based and not a possession as in the Western culture.

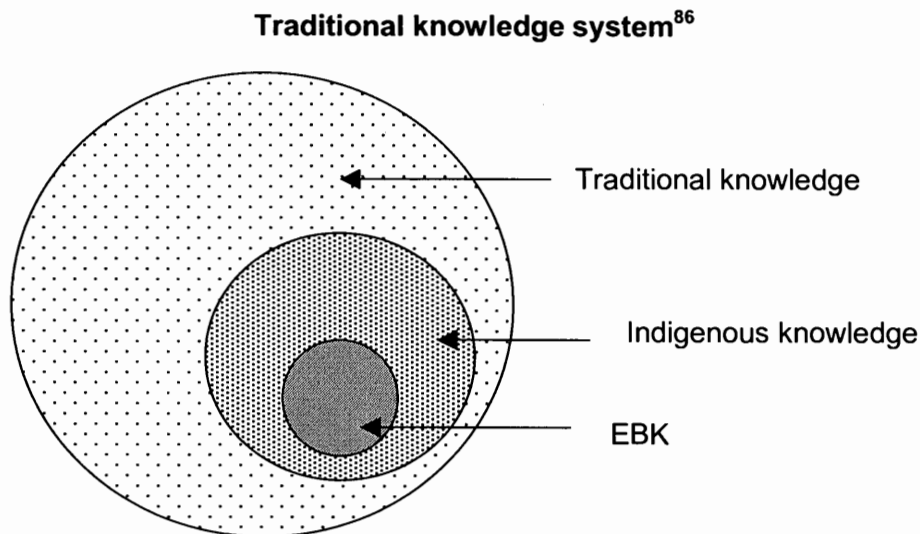
As we are concerned in this dissertation with the intellectual property aspects of indigenous knowledge and thus the sub-text of the commercial exploitation of same, I found the following description of indigenous knowledge as intellectual property by Greaves to neatly sum up the relevant dilemmas – *“Indigenous cultural knowledge has always been an open treasure box for the unfettered appropriation of items of value to Western civilisation. While we assiduously protect rights to valuable knowledge amongst ourselves, indigenous people have never been accorded similar rights over cultural knowledge. Existing Western intellectual property laws support, promote and excuse the wholesale uninvited appropriation of whatever indigenous item strikes our fancy or promises profit, with no obligation or expectation to allow the originators of the knowledge a say or a share in the proceeds”*⁸⁴ This paragraph illustrates the double-edged sword of Western intellectual property and the legal veracity of copyright and the like i.e. the information is gathered and stringently protected by the legal systems and thus leaving the original holder of that knowledge in the cold and may even criminalise his or her actions or leave them open to civil suites should they try and exercise their rights over their own knowledge, a perfect example being the case study at the beginning of this dissertation regarding the song *Mbube*. This is however an opportune moment to strike a word of warning, as it must be said that most of the workings of the Western intellectual property right laws are fair and just and are usually equitably applied, the problem is that they were simply not designed to handle the vagaries and subtleties of indigenous knowledge and in fact, many of those laws came into being during the colonial era when indigenous peoples were regarded as second or third class citizens, citizens certainly not possessing knowledge worthy of legal protection, whose lands were regarded as being ‘empty’. Therefore, in my opinion, we must tread carefully in our criticisms of Western intellectual property laws, as they do serve a valuable purpose in the realm in which they were designed but we must be equally careful and creative when applying them to indigenous knowledge.

Traditional knowledge is that which is held by members of a distinct culture and concerns itself with that culture itself or the environment in which it exists⁸⁵. As the

⁸⁴ Greaves 1996: pp 4

⁸⁵ Ibid. pp:3 Mugabe

definition of an indigenous people as described in Part 4.1 above is narrower than that of a 'traditional people', therefore indigenous knowledge can be regarded as a sub-category of traditional knowledge. Ethno-biological knowledge ("EBK") is in turn a sub-category of indigenous knowledge and it is with this knowledge system that we are concerned with in this dissertation, therefore whilst EBK is always indigenous knowledge, not all indigenous knowledge is EBK.



EBK can be described as that element of indigenous knowledge that is particular to the functioning of one of the first four elements of biodiversity, being information held by a person from an indigenous people on an aspect of either, **genetic** structures, a particular **species, ecosystems** or **landscapes** or any combination thereof and thus, in my opinion becomes in itself, the *fifth element of biodiversity*.

5. CASE STUDY: THE SAN / CSIR HOODIA SETTLEMENT

5.1 The San in Southern Africa: Approximately 1750 BP Until Present

As we saw earlier, until approximately 1750 BP, the San were living throughout Southern Africa in nomadic groups as hunters and gatherers, they were to be found as far north as the arid Kalahari, east as far as the mountainous parts of modern day Lesotho and the temperate lowlands of the west and east coasts ^{xx}. From that time (and that is an approximation based largely on archaeological diggings and carbon-

⁸⁶ Mugabe Ibid. pp:3

dating San art) until approximately 800 BP, the San experienced the southwards migration from Central Africa of the proto-Bantu speaking peoples. These people's would eventually become the Zulu, Xhosa, Tswana and Sotho Chiefdoms whose descendants would form the largest majority of South Africa's modern day population.⁸⁷ The arrival of the iron age proto-Bantus obviously had an impact on the lifestyles of the San but it is presumed to have been relatively untraumatic. The new co-inhabitants of Southern Africa were agro-pastoralists and their practice of occupying land for crop-growing and animal husbandry pushed the San to the modern day Western Cape and Kalahari regions, areas not suited for agriculture because the former was a winter rainfall region and the latter a desert. Though these experiences may sound like they would have had an extremely negative impact on the San, they would have happened relatively amicably, for three reasons (a) the proto-Bantu peoples were stone age peoples and were not yet organised into the fierce warrior castes of later i.e. the Zulus and thus were in no real position to annihilate the San (remembering that the San themselves would have been armed and were formidable fighters in their own right), (b) the large geographical areas and the relatively low population numbers of proto-Bantus mean that there was room for all and (c) the long time-span of the move south (circa 1750 BP – 800 BP) allowed for a relatively seamless transition⁸⁸. In fact, over many centuries, integration between the two groups took place as some San married into these new farming communities, others were employed by them and today we see many of the characteristics of the San in modern day South Africans as evidenced by DNA testing and in the clicking sounds of some of the languages and the existence of high cheekbones and lighter skin colour, particularly amongst the amaXhosa.⁸⁹

The arrival of European settlers in the late 17th century was to have a profound impact on the lifestyle of the San, unfortunately a very negative one. Jan van Riebeeck famously arrived at the Cape of Good Hope in 1652 but before him the Portuguese had made stops along the Southern African coast and before them there is much evidence that great Chinese fleets circumnavigated the Cape circa 1421 AD⁹⁰. By now, the integration of the San and the proto-Bantu peoples was complete and the San who did not choose to integrate lived their traditional hunter-gatherer lifestyles, as mentioned

⁸⁷ Stephenson 2003: pp 5

⁸⁸ Mountain 2003: pp 22 – 26

⁸⁹ Ibid. pp 24

⁹⁰ See the book *1421: The year China Discovered America* by Gavin Menzies

before, in the arid Kalahari of modern day northern South Africa, Namibia and Botswana and the Mediterranean Western Cape. Their attachment to their land would have been complete by the time the European settlers arrived and their range of habitation completely delineated (of course not in the modern sense of deeds registries and the other means that register real rights but simply by long standing occupation and use). The occupation of a particular clan of San with their territory would be handed down from generation to generation, forming a non-linear and non temporal bond with that landscape, a sacred bond, reinforced and transported through the vehicles of myth, stories and legend – the American geographer Yi-Fu Tuan refers to this as ‘*topophilia*’⁹¹ or otherwise described as “*the affective bond between people and landscape in which they lie that extends into a desire to stress the individuality of the group ... the power of the bond that developed between their surroundings is obvious from remarks they made about the land they regarded as their own. It is also evident in their distress at losing rights to their land and being moved from one place to another in colonial times*”⁹² Historian Nigel Penn describes this link as follows and is in my opinion one of the more profound descriptions of the way of the San: “ ... *there was a profoundly spiritual connection between particular places and the systems of meaning that the San had constructed in order to explain their world ... Thus, to lose their land was to literally lose everything.*”⁹³

The European colonists and the San almost immediately headed into conflict, the colonists seeing the San as ‘the other’, as Penn explains: “*To European observers, the San seemed to possess no property, political structures, houses, literacy, decency or even an intelligible language. Somatically too, they were as far removed from the European norm as any people the Dutch had ever encountered. Conscious of the achievements of their own nation and imbued with a sense of their own superiority under God’s guidance, it was hardly surprising that the colonists should imagine the San to be completely ‘other’ than themselves. Fear, contempt hatred and the almost unrestrained licence to violence provided by the context of legitimate war on the furthest frontiers of European expansion, ensured that the war against the San would be marked by genocidal atrocities*”⁹⁴.” The San were, first by the Dutch settlers and thereafter by the British, ruthlessly hunted down, forced off their ancestral

⁹¹ Mountain 1999 : pp 26

⁹² Ibid. with reference to Hilary & Jeanette Deacon

⁹³ Penn 1996: pp 88

⁹⁴ Ibid. 89

lands and sometimes turned into forced labour. Mountain talks about a frontiersman who declared that the parties under his specific orders for a period of six years had killed or taken prisoner about three thousand two hundred San, another boasted that actions in which he had been engaged had caused the destruction of two thousand seven hundred San, being men, women and children.⁹⁴ By 1910 the extinction of the indigenous San culture and most of the San languages in South Africa was complete. The /Xam language, as spoken by the largest grouping of San in Southern Africa died out about this time.⁹⁵

By now very small remnants of the San lived in tiny, isolated pockets (one hesitates to use the word community) in Angola, Botswana and Namibia. Those in South Africa were largely dispersed amongst the farming communities, becoming itinerant labourers. Much of their language, culture and traditions were lost. During the 20th century, more humiliation was to be heaped on the San during the South African *apartheid* era, whereby through instruments such as the *Coloured Registration Act of 1955*, the remaining San had to register as either Coloured or Bantu, thus eliminating (or at least heavily obscuring) any trace of their distinct anthropological or cultural structures.⁹⁶

The consequence of these physical and moral assaults was that some San simply went where they would not be found and disturbed, to the vast expanses of the Kalahari Desert, in what is today Namibia and Botswana. Stephenson⁹⁷ quotes the ethnographers Richard Lee, Robert Hitchcock and Megan Biesel explaining this phenomena as follows: "*Distance and the isolation of the Kalahari Dessert and its surrounding regions proved to be the San's salvation. Nearly eighty thousand San are found there today, with smaller numbers in Angola, Zambia and Zimbabwe. In the 20th century, a number of San groups continued to maintain the small-scale nomadic hunting and gathering way of life recorded by anthropologists and filmmakers. However, a larger percentage were*

⁹⁴ Mountain 2003: pp 30

⁹⁵ Ibid. pp 36

⁹⁶ Stephenson 2003: pp21

⁹⁷ Ibid.

*drown into oppressive work conditions and deeper poverty under the domination of both African and White powerholders*⁹⁸

Today, there are three main groupings of San language families, being ~

- the *Northern* or *Ju* family;
- the *Central* or *Khoe* family; and
- the *Southern* or *!Ui-Taa* family (including the *ǀKhomani*)

found primarily in four locations ~

- independent villages practising a mixed economy (some *Ju|'hoansi*, *Hai om*, *ǀKhomani* and *Ts'ëxa* San);
- attached to Bantu villages and cattle posts (*Northern !Kung*);
- working on commercial ranches and farms (*Omahake* San); and
- in government resettlement schemes (*New Xade* and some *Ju|'hoansi* and the *!Xun* and *Khwe* of Kimberly,

represented by the following three political organisation and networks ~

- *The Working group on Indigenous Minorities in Southern Africa* (“WIMSA”) – founded in 1996, WIMSA’s goal is to unite all San communities through a San Council that will be recognised as such by the Southern African development Community and representing San communities in South Africa, Namibia and Botswana;
- *South African San Council* – convened in 2001, the Council falls under the auspices of WIMSA with the main objectives being to “advance the rights of South African communities on local, national and regional levels ... and to co-ordinate development plans, programmes and awareness campaigns with San communities, NGO’s researchers and government departments.”
- *South African San Institute* – established in 1996 under the auspices of WIMSA to focus on⁹⁹ ~
 - a) cultural preservation and development;

⁹⁸ Ibid.

⁹⁹ Constitution of the San Council of South Africa

- b) human, civil and other rights e.g. land rights;
- c) economic empowerment and livelihoods; and
- d) capacity building and leadership development.¹⁰⁰

The first real turnaround in the San's fortunes was the land restitution deal signed at Askham, South Africa on March 21, 1999 between the Government of South Africa and the ǀKhomani San Community, where the successful restitution of the San's use and enjoyment of tribal lands an area approximately 65, 000 hectares in size adjoining the *Kgalagadi Transfrontier Park*¹⁰¹ and this initiative continues to today with land claims being lodged regarding the restitution of the San's rights to their right to reside on land in the Central Kalahari Game Reserve from which the San were evicted, ostensibly because of the valuable land upon which the San resided. Action is pending in the Botswana High Court at New Xade.¹⁰²

Other initiatives that have been launched are ~

- (a) the attempt to include the San in the benefits of enjoyment and commercial use of the thousands of San rock paintings / rock art strewn throughout the granites precipices and caves of Southern Africa¹⁰³. These have been reproduced without authorisation or authority from the San on a very widespread basis and used in everything from advertising material, to corporate logos to greeting cards. The issues relating to this matter are, I submit, very different to those that attach to the *Hoodia* debate because firstly, the paintings are real tangible things and these are protected in South Africa and elsewhere by the law pertaining to copyright, with all of the complexities that that entails and secondly, the painting were abandoned in the physical sense and thus fall under the category of *res derelicta* (things that are thrown away) in terms of the law pertaining to things. Having said that, hopefully there can be a *sui generis* mechanism created whereby the San can receive the benefits of their traditional art in the form of royalties and/or authorship rights and as the *Hoodia* settlement and the Biodiversity Act have created some sort of

¹⁰⁰ All from Stephenson 2003 : 25-27 (save where otherwise mentioned)

¹⁰¹ Chennels 2002

¹⁰² *Botswana Land Claim case to Resume* by Rodrick Mukumbira at www.iol.co.za July 25, 2004

¹⁰³ Conversations with Roger Chennels and in '*The Hunter - Litigators*' by Hawthorne 2001

template for handling the ethno-biological knowledge of indigenous peoples in South Africa, perhaps after more research, lobbying and legislative assertiveness, there will be a commercial solution that benefits the San in this regard;

- (b) since 1997, WIMSA has been charging journalists and researchers for access to the San and the in-house research and documentation of WIMSA¹⁰⁴;
- (c) since 1997, WIMSA has taken legal action against persons and companies for the unauthorised use of the name 'San' or 'the San' and photographs of San in books, on postcards, in advertising and promotional materials. In 2000, the San negotiated a royalty agreement with a company that produced an award-winning documentary on the San. The revenues have been channelled into education and community development, under the auspices of WIMSA. Chennels explains this new found assertiveness as follows: *"This is about righting the wrongs of history. No one cared in the past. Now, all over the world, first peoples are speaking out.... They have been giving away their culture for too long and now they are beginning to understand the value of it and how to preserve it."*¹⁰⁵

5.2 The Beginning

The opening event of this case study is an amazing analogy of how much of the modern (primarily Western but not always) commercial and R&D (research and development) domain interfaces with the 'old', 'original' and 'traditional' of the natural world, whether it be specific plants or animals, ecosystems or the indigenous people who have lived in them.

The first inkling the San had that the largest drug company in the world, *Pfizer Inc* ("Pfizer") and its licensor, *Phytopharm* intended to commercial exploit the priorities of the *Hoodia* plant was when their legal counsel, Roger Chennels was contacted by journalists from *The Observer*¹⁰⁶ newspaper to confirm the correctness of a statement by the chief executive officer of *Phytopharm*, Richard Dixey that no commercial benefit

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ For the article: *"In Africa the Hoodia cactus keeps men alive. Now its secret is 'stolen' to make us thin."* Sunday, June 17, 2001

would flow to the San because they “*were extinct.*”¹⁰⁷ His ignorance was not unique and to an extent was understandable when you read what a London based organisation called Survival International, whose mission statement describes their role as “... *an organisation supporting tribal peoples. It stands for their right to decide their own future and helps them protect their lives, lands and human rights.*” In a newsletter¹⁰⁸ this organisation describes the San as “... *an extinct African tribe... the `Kung People ...`*” who used the Hoodia “... *during long ceremonial hunting trips.*” They were wrong on both counts, for as we know the San is not extinct and the *Hoodia* was used out of necessity and not for ceremonial purposes.

The call to Chennels and much groundwork by the Cape Town based NGO, Biowatch, sprung into action a vigorous response by the San and WIMSA, which ultimately led to the commercial settlement described below. What I find so revealing about Dixey's statement is that it tells us so much about the prevailing attitude of modern commerce to indigenous peoples. Most, if not all of the research material that was read for this dissertation was either by intellectuals who, whilst looking at this issue objectively, are clearly pro indigenous peoples and their rights. I say this because the weighting of the words and the nature of their phraseology shows their sensitivity to the indigenous peoples of the world. This is not a scientific observation but my opinion. Other writings from the mainstream press, were most often objective but with clear positive sentiment towards the San. Why is this at all relevant? Because there is almost a complete absence of material and literature emanating from the multi-nationals that engage in bioprospecting about these matters. This is obviously a function of the fact that corporations do not publicise their activities until they have secured the respective proprietary right that it seeks, whether it be through an agreement, intellectual property regime or an out-and-out purchase. This is to protect their competitive advantage over their opposition companies and also because corporations typically operate under fairly stringent secrecy provisions, much like nation-states and their interface with the public and the media is typically controlled and regulated, with lots of media ‘spin’.

It must also be kept in mind that companies are driven by the creation of profit. Having been an employee of a multi-national at just under board level, I am aware of the intense pressures that the executive of such companies are under to maximise

¹⁰⁷ ⁴ Conversations with Roger Chennels

¹⁰⁸ Published April 10, 2001

shareholder profits and how the board puts huge pressure on the employees to 'deliver results'. The companies and entrepreneurs that populate the 'McWorld' are a self-perpetuating profit making machine that pays little heed to issues that do not directly affect the profit enhancing machinations of such an organisation. The motive is typically '*will we be embarrassed / fined / caught / lose our licence/ be prosecuted, if we do ABC or XYZ?*' and very rarely '*is this right / is this morally sustainable?*' The reason I raise this issue is that when examining the legal regime surrounding issues like ethno-biological knowledge and the practical implementation thereof, we must keep in mind the rolling juggernaut of globalisation and the profit motive against the forces that seek to protect indigenous peoples and knowledge and the areas in which they flourish but this is not necessarily a struggle of black versus white or good versus evil but a situation where, like with most commercial transactions, both parties must '*leave something on the table*' i.e. a pragmatic commercial middle ground must be sought where the companies receive reasonable compensation, certainly enough to incentivise them into conducting the necessary R&D yet the holders of the indigenous knowledge must be paid fairly in the new currencies of cash and / or structural investment and the old sacred currencies of respect, acknowledgement and perpetuation of tradition.

5.3 The *Hoodia* Plant and its use by the San

The different variations of *Hoodia* found in South Africa are *Hoodia Currorii*, *Hoodia Gordonii* and *Hoodia Flava*, all being of the *Asclepiadaceae* Family of plants. The San speak of the *Hoodia* as *Ghaap*, *!hab* or *!Khobab*. It is a cactus like leafless succulent with fleshy, finger-like stems and grows up to seven feet in height. The flowers have a putrid smell, not unlike decaying meat, which serves to attract flies and other insects and this serves with the pollination of the plant's flowers.¹⁰⁹

The San have for centuries used the *Hoodia* as an appetite suppressant. It also reduces the body's desire for water (though whether this removes the signals of thirst or allows the body to actually retain more or use less water is unclear). They would simply chew on its leafy substance and the effect would be to alleviate hunger pains, useful both on the hunt and in lean times.

¹⁰⁹ Stehpenson 2003: pp 28

The San used (and still do today) this plant when food is scarce or if they embark on one of their arduous hunts, which often entail the most extraordinary feats of physical and mental endurance, such as the style of hunt known as “The Great Dance”, where the San will shoot their prey with the poison tipped arrows they hunt with (which don’t kill immediately but take numerous hours to take ultimate effect) and then chase down their prey, running continuously for periods of up to twelve hours, often traversing distances equal to two marathons, with no respite.¹¹⁰

5.4 The Initial Research until Patenting

In 1937, anthropologists (White and Sloane) studying the San in the Kalahari, straddling the border of modern day South Africa and Namibia noticed that they sucked a plant as a “thirst quencher” and “substitute for food and water”¹¹¹. Anthropologists Watt and Breyer-Brandwijk undertook further work in 1963. A Dr. Marloth, a participant in the 1937 expedition wrote at the time: “*This is the real ghaap of the natives, who use it as a substitute for food and water. The sweet sap reminds one of liquorice and when on one occasion thirst forced me to follow the example of my Hottentot guide, it saved further suffering and removed the pangs of hunger so efficiently that I could not eat anything for a day after having reached the camp*”¹¹².

The South African Council for Scientific Research (“CSIR”) took up the previous research as it was interested in *Hoodia* as part of its ongoing research into the edible indigenous plants of South Africa, yet this stalled and lay dormant until 1982. Thereafter and up until 1996 research into the appetite suppressant and thirst reduction properties of the plant continued and in 1996, the CSIR filed S.A. Patent No. 983170 (“pharmaceutical with appetite suppressant”). In 1998, the CSIR obtained the United Kingdom patent GB2338235 and the world wide patent WO 98/46243 covering the “*raw materials, active substances and mode of action*” of P57¹¹³. An example of a patent description of the element of the P57 ‘invention’ being patented i.e. the manner

¹¹⁰ *Bushmen’s remedy to aid slimmers* by Jane Flanagan: 2001

¹¹¹ *African plant’s promise puts spotlight on tribal remedies*, *Boston Globe*, February 12, 2001

¹¹² In White and Sloane 1937

¹¹³ ⁿ⁵ Please see page 38 of the *Benefit Sharing Agreement* between the San Council and the CSIR for a full list of patents, world wide

of extraction and reproduction of P57 from the *Hoodia*, being patented is to be found in Stephenson¹¹⁴.

5.5 The Negotiated Settlement

The CSIR, as holder of the patent, was thus the owner of the extraction and reproduction methods of P57. It licensed the rights to the British company Phytopharm Plc in June 1997¹¹⁵. As the CSIR is primarily a research and development company, it needed to enter into a relationship with someone who would be able to prosecute the commercial exploitation of this proposed wonder drug. In August of 1998, Phytopharm entered into a sub-licencing agreement with the United States drug manufacturer Pfizer Inc. (the largest drug manufacturing company in the world) whereby that company would take P57 through development and commercialisation. In December 1991, Phytopharm announced the completion of proof regarding the clinical aspects of P57¹¹⁶, thus proving its viability and safety as a commercial medication. August 2002 saw Phytopharm announce that it had completed the installation of a botanical supplies unit in South Africa to expand the manufacturing capacity for P57.¹¹⁷ A network of commercial and industrial relationships and installations was not complete, ready to take P57 to the market, hopefully as the next wonder drug *à la* Viagra, which is also a product of Pfizer.

We saw above that the San (*via* Roger Chennels and Biowatch) found out in June 2001 of this process and initiated a response. It is remarkable and not a little concerning that the CSIR did not themselves initiate contact unilaterally, after all they are an organ of the state, there were draft policies and Bills by June 2001 (please see Part 3.4 above) and they had effected a Memorandum of Understanding with a South African Traditional Doctor's Committee whereby the CSIR and this organisation would collaborate regarding the exploitation of traditional medicines whilst guaranteeing their rights to receive commercial benefits¹¹⁸. Admittedly, the San did not fall under this body

¹¹⁴ Stephenson 2003: pp 33, footnote 134

¹¹⁵ *Ibid.* pp 6

¹¹⁶ *Ibid.* pp 7

¹¹⁷ *Ibid.*

¹¹⁸ *Ibid.* pp 6

but it remains surprising that the CSIR did not approach the San, after all, they had scientific research dating back to 1937 that the original holders of this knowledge were the San. Having made this criticism and it needs to be made, it must be said that there had at that time been no real move made in South Africa to deal with the issue of indigenous knowledge and the exploitation of same and the CSIR has subsequently entered into a commercial relationship with the San to manage this very same issue and I submit that if they had not, the San would not have seen one cent from the exploitation of P57 by Phytopharm and Pfizer.

The CSIR and the San entered into negotiations which resulted in two Memorandums of Understanding being executed¹¹⁹ and the negotiations were concluded with the signing of a formal Benefit Sharing Agreement on 24 March 2003 (“the Agreement”)¹²⁰, the salient terms being ~

1. The San should form the “*San Hoodia Benefit Sharing Trust*”;
2. The above trust would receive, depending on the success of the clinical trials and commercial release:
 - (a) 8% of all *milestone income* received by the CSIR from Phytopharm over three years (the development period) [clause 1.5.1 of the Agreement] (which amounts to approximately US\$ 1.5 million)¹²¹;
 - (b) 6% of all *royalty payments* received by the CSIR for the duration of the patents (with regard to patented products) and 20 years with regard to royalties [clause 1.5.2 read with clause 1.1.13].

Mention has been made by some commentators¹²² that the financial remuneration received by the San will be perhaps as low as 0.003% of net sales. At first glance this

¹¹⁹ Contracting parties the CSIR and the *South African San Council* (which is an affiliate of WIMSA) and executed on 1 February 2001 and 19 March 2002

¹²⁰ Chennels 2003: pp10. The agreement is called Benefit Sharing Agreement and the contracting parties are the CSIR and the *South African San Council*. The Deed of Trust of the *San Hoodia Benefit Sharing Trust* is attached as an annexe

¹²¹ Ibid.

¹²² see Rachel Wynberg in *Sharing the Crumbs with the San*

figure looks very low and perhaps history will prove that view correct i.e. after other settlements are effected elsewhere but Chennels ¹²³ is of the view that this figure is in line with other settlements and was, under the very unusual and novel circumstance of this case fair. The jury is probably still out on that view and will only be decided by that most perfect of sights – hindsight.

Other elements of the benefit sharing agreement that are of import (in no particular order) ~

- the CSIR recognises the San as “*custodians of an ancient body of traditional knowledge and cultural values, related inter alia to human uses of the Hoodia plant, resulting from their interrelatedness with nature in all its forms, over the ages*”¹²⁴ and “*The CSIR acknowledges the existence and the importance of the traditional knowledge of the San people, and the fact that such body of knowledge, existing for millennia, predated scientific knowledge developed by Western civilisation over the past century*”¹²⁵. These words do not carry much contractual weight and I suspect that in litigation would only be of value as background to the intentions of the parties, however, I suspect that these words are the most important and fundamental in the agreement, as they serve to acknowledge the State’s (via the CSIR) recognition of the San and their sacred traditions and knowledge. Whilst the monies that flow from this transaction will be most welcomed by the different San communities, I think the self-respect returned will be the real long term currency;

- Clause 3.5 of the agreement holds an undertaking where the contracting parties enter into a detailed Bioprospecting Collaboration Agreement, this is currently not yet complete¹²⁶;

- All intellectual property vests in the CSIR (clause 4), this is only a benefit sharing agreement;

¹²³ Conversations with Roger Chennels

¹²⁴ At page 2 of the Agreement at (a)

¹²⁵ Ibid. at (b)

¹²⁶ e-mail communication with Dr. Marthinus Horak of the CSIR, September 7, 2004

- the San are precluded from approaching Pftypharm or Pfizer directly, their interface with the transaction can only be through the CSIR (clause 6.1.5);
- The San Council warrants that it is the “*legal custodian of the knowledge*” i.e. the relevant ethno-biological knowledge (at clause 6.1.1) and the same clause details other issues regarding the San’s perceived IPR’s. This is an attempt to ‘formalise’ their ‘ownership’ of the knowledge but may prove problematic, as the very reason the San have been marginalised is that the world at large has not formally protected their knowledge and I can’t see how they can do it themselves in terms of the Agreement. I believe this aspect is a weakness in the contract in the sense that the San Council may symbolically ‘own the knowledge’ but may not have the *locus standi* in law to contract. The only party who can challenge this is the CSIR and they would have entered into his agreement, knowing they didn’t have to, in law, but probably acted out of principal and largesse. Interestingly, the CSIR may well have been incentives to contract, for if they didn’t the San may well have been able to challenge aspects of the patenting of the Hoodia / P57 extraction process, primarily the aspects of its use, that may have been challenged as not being novel¹²⁷. Nothing precludes interested third parties i.e. San that may feel marginalised from the San Council or WIMSA from launching this very same attack upon the patent, with what chance of success I cannot say;
- The WIMSA Board, in a Resolution¹²⁸ pledged to distribute the commercial benefits of the agreement amongst the San of Namibia, Botswana and South Africa and to allocate such funds to the protection of heritage, purchased of land for the San in each country and regional government expenses (WIMSA expenses)

Having examined the current South Africa law regarding intellectual property rights, had the CSIR not entered into relevant agreements with the San, the San would have been very hard pressed, if not completely prevented, from pressing their ‘rights of ownership’ against the three commercial principals. Their arguments would have had much emotional thrust and could have caused bad publicity and negative press for the three principals but would have found no respite in the cold light of a South African court of law, only lobbying the State could have forced the CSIR to enter into any

¹²⁷ See Stephenson 2003, footnote 134 for an extracts from a P57 *Hoodia* patent application

¹²⁸ Dated 5 June 2002, taken at D’Kar

benefit sharing agreement and their only real remedy would have been to attack the patent in terms of the *novelty* aspect thereof. The settlement was hailed in the popular press¹²⁹ and was said to have set an international precedent, which I believe it did. Also, I believe that this settlement will make a compelling case study and will provide very useful frameworks for similar negotiations elsewhere.

My view is that the San / CSIR settlement was an anomaly in the South African commercial realm and legal regime, albeit a relatively satisfying one and created no legal precedent (though creating a valuable commercial one). The legal framework has been created via the Biodiversity Act and the settlement's true value is as a case study of how to implement a tricky commercial settlement in a field of law that is growing and developing in an organic way. Hopefully the new policies and legislation that are due to be published by the Department of Science and technology (no date is available but the new policy is expected within a 'few weeks'¹³⁰) will provide for the weaknesses amongst IPR's and indigenous knowledge.

6. CONCLUSION & RECOMMENDATION

The San / CSIR settlement is for me one of the reasons that much positive is coming out of South Africa because in the cold marketplace, the CSIR could probably just have ignored the San, knowing they may have had the will but probably not the resources or the wherewithal to attack three large principals. My congratulations to the CSIR, the San and Roger Chennels.

As mentioned before, the DST's policy on indigenous knowledge is only known in the widest sense and the enactment date and content of indigenous people's IPR legislation is unclear. We know that existing IPR's do not protect holders of indigenous knowledge and that there is a void for their future regulation. We also know that the Biodiversity Act regulates the act of bioprospecting in South Africa. That Act is clearly written to interface with some sort of IPR regime. The regulation of indigenous knowledge and IPR's in South Africa is thus only half-complete. To complete the full protection of these unique rights, within in South Africa, I recommend, in conjunction with the Biodiversity Act, the following legal regime ~

¹²⁹ See *Newspaper Articles* in Bibliography

¹³⁰ Mr. Tom Suchandan of the DST on 8 September 2004 from DST

1. A new *sui generis* legal regime, created by legislation, whereby the traditional communal knowledge of South African indigenous peoples (whether relating to, amongst others: the arts, medicine, zoology, music, building techniques or geology) is *deemed* to be entrusted to the State in a manner similar to which the estate of a deceased vests in the trustee of that estate or the assets of a sequestered person vest in its trustee. I am thus not suggesting a form of nationalisation or *de facto* ownership, just that the State, as the representative of South Africa's peoples in terms of the Constitution, is entrusted with this knowledge as if a *bonus paterfamilias*, for a finite period, say 20 years pending the *allocation* of it to its rightful owner. I realise that such thinking exposes one to accusations of being patronising and that it opens the door to another form of colonialism (just internal this time) but regardless I still believe this method can be very useful;
2. During the 20 year period (hopefully ample time), an audit is to be undertaken by appointed institutions such as the MRC, CSIR, relevant government departments and universities, with appropriate funding and technical support, whereby as much of this knowledge is codified and catalogued and identified as being the property of the relevant peoples concerned, until it can be properly *allocated* to the relevant people. Ownership in this information will vest (after codification and cataloguing), via copyright, in the State who shall hold it in trust on behalf of the relevant indigenous people, who shall then be *allocated* it via assignment to utilise in terms of the Biodiversity Act i.e. they will then be recognised stakeholders in terms of that Act and anyone wishing to bioprospect that information shall then be free to do, in terms of the Act; and
3. I suggest that the Biodiversity Act is amended to include this regime and would also be affected by making the State a stakeholder with regard to holding indigenous knowledge in its role as trustee or custodian (The Act already binds the State). Thus a bioprospector would be forced, within South Africa to either interface with the State (as trustee) or the actual stakeholder, who has been allocated the relevant ownership by the State or whose ownership was so clear it did not have to go through the process mentioned in points 1 and 2 above, an example would be the San's use of the Hoodia; and
4. The State would also exercise a valuable dispute resolution mechanism when different aspects or sub-groups of a people cannot agree on who represents that

people or when two or more peoples claim rights to a specific aspects of indiginous knowledge.

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