# BIODIVERSITY AND PERSPECTIVES OF TRADITIONAL KNOWLEDGE IN SOUTH AFRICA

## ABSTRACT

**The San peoples, known as marginalised"first peoples" indigenous to Africa, have over the past five years rapidly discovered the meaning of the words biodiversity and traditional knowledge, whilst being drawn in to the hitherto arcane and irrelevant world of intellectual property and international trade.**

**This paper briefly traverses the case of the patenting of an extract of the Hoodia Gordonii, one of the many plant products used for medicinal purposes (as an appetite suppressant) by the San, and the subsequent developments in the San world as well as on a national policy level. Some issues arising during the case such as the requirement of prior informed consent, the further articulation of the San's collective legal rights, benefit sharing and intellectual property issues relative to traditional knowledge of indigenous peoples, are discussed.**

## 1 THE SAN PEOPLES

The San peoples of Southern Africa are the acknowledged "First Peoples" of Africa, widely touted as the holders of the oldest genes known to man. Their numbers are now reduced to approximately 100 000 in Botswana, Namibia and Angola and South Africa[1], where they generally inhabit hostile environments, live close to nature, and survive in poverty on the fringes of the emerging African societies.

It is relevant to the story of the San's involvement in the current debate on biodiversity, traditional knowledge and intellectual property that they formed their own networking organisation in 1996, in order to better connect with the growing indigenous peoples movement and the UN Decade on Indigenous Peoples. In Africa the term "indigenous" is not free of controversy.[2]
It should be noted that the San, in common with fellow aboriginals elsewhere in the world,[3] suffered the most devastating persecution during the past three centuries, with a minuscule fraction of their original numbers surviving today. Despite their vast differences, these indigenous peoples share remarkably similar cosmologies, incorporating their respect for and relationship to the natural world.

[1] Current estimates of San populations are as follows: Botswana, 55 000, Namibia 35 000, South Africa, 8 000, Angola 3 500. (Zimbabwe, Zambia, Mozambique unknown.)
[2] In its most simple form, the word means 'belonging to the earth'. In that broad sense virtually every person could be said to be indigenous to some land or area.
The word has also evolved during colonial times to mean 'local', 'native' or 'non-european'. [2] Under this expanded meaning, all of the peoples indigenous to Africa are 'indigenous', and one could say that their knowledge systems are 'indigenous knowledge systems'. This broader meaning would include all major groups in Africa such as Kikuyu, Swahili, Tswana, Zulu and Xhosa.
[3] The Maories, Australian Aborigines, Pigmies, Amazon Indians, Native Americans, Innus, Innuits, are perhaps the most commonly known.

Following the example set by the SAMI peoples of Scandinavia, the San formed WIMSA[4] with the aim of joining the leadership of their widely disparate peoples, including at least seven different language groups and countless dialects, in a regional body capable of articulating and defending their collective rights. WIMSA facilitated the process both of connecting the far-flung San organisations within Southern Africa, whilst engaging with the growing international movement of those peoples who define themselves as "indigenous"[5,6]. In so doing the San have not escaped harassment from their own indigenous governments, who reject the notion that a group of citizens should remain distinct and assert the right to live differently to the mainstream.[7]

The San peoples are, not surprisingly, the holders of a body of traditional knowledge that is notoriously difficult to quantify or comprehend by western standards. Having evolved over millennia as inhabitants of the natural world, their customs, myths, cosmology, culture and medicinal practices are predicated on an intricate knowledge of the biodiversity that surrounds them. Much of their folklore, such as how to find, prepare and use a particular plant or combination of plants to deal with a specific problem, is regarded as barely worth discussion, much as most westerners would be expected to know how to 'take an aspirin with a glass of water' for a headache.'

## 2 THE SAN'S TRADITIONAL KNOWLEDGE, AND THE PATENTING OF THE HOODIA PATENT "P 57"

It is widely recognised that mankind has barely begun to unlock the knowledge of the biodiversity that surrounds us, and that traditional healers of tribal and indigenous peoples possess repositories of information that can be invaluable to those who wish to advance both scientific knowledge and to reap the associated commercial rewards.

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[5] The widely accepted definition of "indigenousness" proposed byMadame Erica-Irene Daes, Chairperson-Rapporteur of the United Nations Working Group on Indigenous Peoples, highlights the following elements

- A priority in time in a particular traditional area
- The voluntary perpetuation of cultural distinctiveness
- An experience of subjugation, marginalisation and dispossession, and
- Self-identification.

[6] The term "indigenous" is now used widely in certain key United Nations arenas, related to Biodiversity, such as the 1992 Convention on Biological Diversity; the World Trade Organisation (WTO) debate on Trade Related Aspects of Intellectual Property Rights (TRIPS); and in the World Intellectual Property Organisation (WIPO) round of consultations on Intellectual Property Rights. Binding rights are contained in the ILO Convention 169 (Convention on the rights of Indigenous and Tribal Peoples adopted in 1989) subsequently ratified by many countries, and the emerging (Draft) Declaration on the Rights of Indigenous Peoples.

[7] The Botswana Government for example, under international pressure for its forced eviction in 2002 of San peoples resident for millennia in the vast Central Kalahari Game Reserve, is on record as stating that they should not live "like animals" and should, despite their resistance, be forced to live like the other "civilized peoples" of Botswana.

Countless examples are recorded of alleged scientific "discoveries" that were clearly shown to be mere scientific recordal and utilisation of ancient knowledge.[8]

The San have until recent years been relatively cut off from and bewildered by the modern commercial world. In the spirit of uninhibited sharing that has always characterised their collaborative lifestyle, San traditional healers have over the years freely provided anthropologists and scientific researchers with any information requested in exchange for tobacco or small gifts. In this manner, most of their stories, myths, and practices were introduced into the public domain without their knowledge and consent, and potentially valuable medicinal information was transferred to the notebooks of researchers without appreciation of the value and nature of the exchange.

During the early 1930s, and in the manner described above, medicinal information including the appetite and thirst-suppressant qualities of the "Xhoba" or Hoodia Gordonii[9], was provided by San healers to a Dutch anthropologist, who recorded this in his diary which was later published in a book.[10] Researchers of the South African Council for Scientific and Industrial Research (the CSIR)[11] discovered this reference as part of their bioprospecting program, and by 1990 began working on patenting the appetite suppressant qualities of an extract of the plant. This research took place in customary secrecy, and by 1995 they had successfully patented the extract under a patent codenamed " P57." San generally accept that their traditional knowledge covered the "hunger suppressant" properties of the Hoodia, rather than the related but more modernly contexted notion of the "appetite suppressant" properties which appear in and are protected by the patent.

**What about the prior informed consent of the San?**

All systems of law require parties to any contract to be fully aware of the implications of the exchange. The prohibition against a stronger party gaining advantage from the lack of knowledge of a weaker party, be it a minor child, an insane person, or an uninformed tribal chief, require no elaboration, and have in the field of IPR and Biodiversity been given effect via various policies[12] and legally binding injunctions.[13] States are further required to comply with the requirements of the CBD by entrenching the need for such prior informed consent into their local biodiversity

[8] Examples are patents on Turmeric powder, the neem tree, and quinoia discussed inter alia in Posey and Dutfield 1996. "Beyond Intellectual Property" Otawa. Also the Ayahuasca and Sangre de drago of South America, kava in the Pacific, bitter melon in Asia.

[9] The Hoodia is a cucumber-like succulent, the Hoodia Gordonii is a species that grows in the North of South Africa. At least seven other species of Hoodia, some with similar medicinal properties, grow in the other countries of Southern Africa.

[10] White and Sloane, 1937. The Stapelieae Vol III!, 2nd Edition, Pasadena, California

[11] A statutory Board under the Department of Arts, Culture Science and Technology, which claims to spend at least 10% of all the research and development carried out in Africa.

[12] The World Bank for example has adopted policies on indigenous peoples, binding on all loans to countries and international consortiums, which require full consultation leading to prior informed consent with such peoples with regard to any development affecting their land or heritage rights.

[13] Article 8(j) of the CBD, requiring member states to " 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".

legislation. Article 15.5[14] of the CBD attempts to protect States themselves from plunder of their own biological resources, and to secure the sovereign right of States to their own biodiversity. The danger of plunder or piracy is presented by the powerful hunger for valuable knowledge that drives the bioprospecting inititives of pharmaceutical and research entities, and this clause recognises that many States need protection from this threat.

Much as States require protection from external threat, so do indigenous communities within States such as the San require protection from such modern forms of plunder and piracy. [15] In 1995 when the Hoodia patent was granted, and indeed until nearly a decade later, South Africa did not have a set of laws and policies envisaged by the CBD in place, designed to protect the holders of traditional knowledge from a bioprospecting agent.[16] (Belatedly significant protection is now provided by Chapter 6 of the Biodiversity Act 2003, as well as by an addendum to the Patent Act which requires the patent applicant to state on oath whether the patent contains the use of or reference to any indigenous or traditional knowledge.)[17]

**Discovery of the patent and negotiations**.

In June 2001, alert NGOs advised the San of the fact that the patent on the Hoodia had been registered. It was soon established that a worldwide patent had been secured, and that the commercial rights to the IP (including further research, drug development, marketing etc) had been licenced in a multimillion dollar deal to a UK company, Phytopharm, who further down-licenced the rights to Pfizer Inc. A representative of Phytopharm rashly commented in a press statement that the San peoples, from whom the knowledge leading to the patent had been obtained, were to the best of his knowledge "extinct" ! This naive blunder naturally contributed greatly to the San's initial outrage and perception of a blatant plunder of their rights.

The San organisation WIMSA launched an immediate process to ascertain and protect the San rights. A discussion of the legal issues raised related to the patent, positions taken and strategies adopted by the parties during negotiations is not central to or discussed in this paper. Nor is the question of the precise nature of the intellectual

[14] Article 15.5 "Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party."

[15] Most States have yet to enact legislation to ensure that the same right of prior informed consent is provided internally to their own indigenous or local communities whose knowledge systems are often intricately interwoven with the sought-after biological resources. In order for this protection to become effective, States are entitled to know who applicants for genetic resources are, what resources are being collected, the uses for which the resources are to be put, and the potential products to be developed.

[16] The Biodiversity Act 2003 now provides significant protection to indigenous peoples. Under chapter 6 which deals with access to benefit sharing (ABS) prospective bioprospectors are required to apply for a bioprospecting permit in advance of any research, in which application they are required to set out

a) whether traditional indigenous ecological knowledge relating to the indigenous genetic resourcs is sought or to be used
b) whether the traditional use of the indigenous genetic resources is sought or to be used,
c) whether the indigenous genetic resource is endemic to land owned or occupied by any local indigenous community or associated with land rights
d) whether prior informed consent of local indigenous communities has been given.[16]

[17] The South African Indigenous Knowledge Systems Bill , currently in draft form, aims inter alia to protect the collective intellectual property rights contained in the knowledge systems of ethnic groups.

property rights of the San, which were the basis of the San claim. In essence, the two parties namely the CSIR as patent-holder and the San as the wronged "traditional knowledge holders" dispassionately weighed up their options, and chose to engage in a dynamic process that lead steadily to a memorandum of understanding followed by hard-fought negotiations on terms of a benefit sharing agreement. The San naturally accused the CSIR of having failed to comply with their legal obligations to secure the San's prior informed consent. The CSIR negotiators apologised profusely, yet also explained the context within which it had devoted its resources towards the research leading to the securing of patent, rather than indulging in what might have turned out be dangerous, nebulous and conjectural negotiations. Some say that the San allowed the CSIR to first steal their knowledge, and then sat down to negotiate with them over the sharing of the spoils. Others, the writer included, defend the process that unfolded as the most beneficial to the San under the circumstances.

### The benefit sharing agreement

In March 2003 a comprehensive benefit sharing agreement was concluded, which was signed by the relevant government Minister on behalf of the South African Government, and by the South African San Council on behalf of the San peoples of Southern Africa. This agreement obliged the CSIR to pay to the San 8 percent of all milestone payments received by them through the licencing of the P 57 patent, and 6 percent of all future royalties. The income stream is to be paid into a trust registered under the Trust Property Protection Act, where seven San trustees elected from four different Southern African countries together with an elected lawyer and a representative from the CSIR are to ensure fair distribution of the anticipated proceeds. The first meeting of the San Hoodia Trust was held in the first week of April, and the first milestone allocation of R 500 000 has been received.

All the primary parties declared themselves satisfied by the agreement, which has been analysed and criticised by a range of observers. Some have criticised the San for having agreed to benefit financially from a patent on a life form, regarded for various reasons to be inimical to justice in the field of biodiversity[18], and others have berated the San for having agreed to accept such a small percentage of the anticipated income to be derived from the patent.[19] During December 2004 Phytopharm announced the appointment of Unilever as the newly appointed commercial licencee, replacing Pfizer who had withdrawn for strategic reasons during mid 2003.

## 3 DIRECT CONSEQUENCES FOR THE SAN

The impact of the Hoodia case on the San, who were suddenly expected to educate themselves and articulate their rights in this previously unknown field, were many.

[18] For example the book by Shiva, Vandana (2001) Protect or Plunder, (understanding intellectual property rights,) David Philip press, Cape Town. She bemoans the "enclosure" of biodiversity and knowledge as a final step of enclosure of the power of indigenous peoples that commenced with the process of colonialism, placing the power in the hands of the corporate western world.(pg 44)

[19] Weinberg R in an article entitled "Sharing the Crumbs with the San," states that the amount of 6% of royalties represents a mere ,003 of gross sales. Mail and Guardian newspaper, 28 March 2003.

**Appreciation of intellectual property and traditional knowledge.**

The San were rapidly required to equip themselves for the Hoodia negotiations described above. San leaders from Botswana, Namibia and South Africa attended urgent workshops on intellectual property issues, and engaged in basic research on the traditional knowledge systems relating to the Hoodia as well as other medicinal plants in their communities. The South African San Council, a committee of ten San leaders mandated by WIMSA to represent the San of the Southern African countries, forged themselves into a competent negotiating team, and soon acquired the basic knowledge necessary to fully understand and articulate their rights. They engaged with the government in consultations related to the Traditional Knowledge Systems legislation[20], and made proposals for the development of policies based upon the principles established during the Hoodia negotiations.

The rapid education of San in the field of intellectual property rights expanded rapidly into other areas, such as the rights to other related forms of heritage. WIMSA developed a media and research policy to govern all research on San communities, and a contract designed to ensure that all research or media interventions are fully understood and controlled by trained San leaders before being allowed to proceed.[21] Despite the unpopularity of this development with social scientists from some universities previously accustomed to unilateral and patronising research on "primitive" San communities, the application of the system led quickly to a new appreciation of the knowledge systems that were suddenly of demonstrable commercial use.

The San, who were hitherto and helplessly one of the world's most avidly researched peoples, now require all research and media proposals to be motivated together with a completed contract. The applications are considered by San leaders, trained in the basic issues, who approve potential projects that provide demonstrable commercial or alternatively broader social benefits for their people.

**Other forms of Heritage; Rock art, traditional music**

The forebears of the San have left a legacy of ancient rock paintings unequalled in the world. Some 25000 recorded San paintings adorn the caves and shelters across the breadth of Southern Africa, some as old as 30 000 years, and providing a tantalising window into the minds of these early hunter gatherers. The artistic and technical techniques applied astound modern researchers, yet rock art researchers and archeologists have developed theories about the meanings of these paintings with a myopic disregard for the views of the San of today. In the absence of any clear articulation of rights from the San descendants of the artists, (who were barely surviving after two centuries of domination including genocide, followed by eviction from their lands and general subjugation) the governments of Southern Africa

[20] Seminar on TKS hosted by Department Arts Culture Science and Technology, Pretoria June 2004.
[21] Joram Useb and Roger Chennells: Indigenous Knowledge Systems. Protection of San Intellectual Property with media and research contracts.. WIMSA, April 2004.

promulgated drafted heritage legislation with no more than a token acknowledgement of the cultural and custodial rights of the San peoples.[22]

This situation has changed. Encouraged by the international developments on heritage protection spearheaded by UNESCO, and strengthened by the work of organisations such as WIPO on Traditional Knowledge and Folklore, the San leaders began to articulate their rights to their heritage in all tangible and intangible forms. Leaders avidly debated issues of intellectual property at a series of workshops, the results of which were contained in a WIMSA publication aimed at providing support to San leaders, who were now expected to protect the collective heritage of their peoples.[23] An active start to this process was made in late 2003 when the San insisted on their total participation on an international rock art museum in the Drakensberg mountains of KwaZulu Natal[24], which had been formerly planned with no reference to the by now well-known San representative organisations. The Kwa Zulu Natal provincial government made a commitment to include San representatives on the governing body that will supervise the management of heritage over the entire heritage site, which is seen as a forerunner of the type of heritage management that the San will increasingly conduct in the future.

**Unity between diverse members of the San peoples.**

The San belong to at least seven distinct language groups spread over a vast area with widely differing cultures and practices, and could have been expected to differ widely with regard to the question of sharing the benefits from their traditional knowledge. Numerous attempts to secure benefit sharing agreements from research with tribal or ethnic groupings have spectacularly run aground on the rocks of self-interest, jealousy and political powerstruggles. Tribal systems adept at the sharing of the modest fruits of nature in a hunter gatherer society could not be expected to expand to deal with the ramifications of the multimillion dollar windfalls trumpeted by the media.

Once it became clear that a benefit sharing agreement that would deliver an unspecified flow of money was in sight, WIMSA held a series of workshops designed to secure the principles and foundations for sharing of the spoils. Participants engaged in frank discussions about the equity of sharing the money. Some advocated a per capita based distribution system, others based upon other criteria. Without the emergence of clear guidelines, consensus could have become impossible to attain.

In the thick of the debates, the following important principles were soon established by the San delegates, that would form the basis for the discussions and agreements.

1 Heritage and indigenous knowledge is collective in nature. It is an asset (property) belonging to all San peoples.
2 No individuals may benefit from San intellectual property.
3 It is the task of the leaders to ensure that a fair system is agreed and protected, in the interests of all of those who look to them for leadership.

[22] South African Heritage Resources Act 2003 regards the San as "local communities" who are to be consulted with regard to the heritage resources (rock art) in their area
[23] WIMSA 2003. The San of Southern Africa. Heritage and Intellectual Property.
[24] Registered as one of South Africa's four World Heritage Sites, protected for the combination of mountain landscape and San rock art heritage.

Based upon the above, the series of workshops unanimously endorsed a simple sharing formula that was ratified at the central WIMSA annual general meeting in November 2003, and which was confirmed as an instruction binding on the Trustees of the San Hoodia Trust.[25] This formula is based upon principle, was soundly endorsed by the current leaders, and is confirmed by various binding declarations. It is to be hoped that the San leaders of the future will respect the deeply shared ethos underlying the benefit sharing agreement, and appreciate the continued power derived from San unity across national and cultural borders.

**Bioprospecting/ Data Base Research Project.**

One of the debates in indigenous circles involves how indigenous or traditional peoples can best protect their intellectual property, in the absence of or in conjunction with the current IP regime. Various forms of "sui generis" systems of protection have been proposed, most of which involve some form or recordal of the traditional knowledge, with the concomitant danger that such knowledge could thereby be made more easily accessible or stealable by biopirates.[26]

The San leaders, after two years of total immersion in the issues, and after they had formed an objective view both on the value and on the vulnerability of their traditional knowledge, decided in early 2004 to consider a joint venture with a suitable scientific partner aimed at recording their traditional plant knowledge on a private data base. A prime consideration was the fact that so much knowledge was disappearing daily with the death of highly knowledgeable elders, whose knowledge systems were simply irreplaceable.

After some consideration of other alternatives, and to the surprise of may, the San entered negotiations with their erstwhile "opponents" in the Hoodia case, namely the South African Council for Scientific and Industrial Research (CSIR). On the 28 October 2004 a comprehensive "Bioprospecting Agreement" was signed by the South African San Council with the CSIR in terms of which the two parties undertake to join forces in a joint bioprospecting venture. The San agree to commit the medicinal and plant knowledge of their elders to the researchers of the CSIR, who in turn record this knowledge on a data base subject to the most stringent security measures, and thereafter analyse the possibilities of the products. Important aspects of this agreement are the fact that all intellectual property arising out of medicinal or commercial "discoveries" are jointly owned by the parties.

Mr Petrus Vaalbooi, chairperson of the South African San Council, was quoted as follows on the signing of the agreement. "The San's use of traditional knowledge should be recorded for purposes of conservation, proof of ownership, and possible use

[25] One quarter of the income is to be retained by the Trust, 10% for Trust expenses, 10% for investment for future needs, and 5% for the organization WIMSA. The remaining 75% is to be divided equally between the San Councils of the countries that are members of WIMSA. (currently Namibia, Botswana and South Africa.

[26] WIPO and the state parties of the WTO thus finds themselves at the centre of an ideological conflict between those advocating collective or sui generis ownership of intellectual property rights on the one hand, and the powerful national and multinational forces that rely upon the current legal paradigm. WIPO has been called upon to make recommendations on "the most appropriate means of recognizing and protecting traditional knowledge, medicinal plants, seeds, and expressions of folklore of indigenous peoples and local communities

of San knowledge for future development projects." Regarding the fact that the San had teamed up with their former opponents, he said " We have walked a considerable distance with the CSIR, and strongly believe that working with the scientists will lead to new opportunities for the San people to benefit from our knowledge of the Veld".[27]

The San believe that by actively joining forces with the scientists who currently control the agenda of the world's research into biogenetic resources, they can best engage with the process rather than complain from the sidelines. This position appears to be at odds with the IP caucus that opposes article 27.3.b of the TRIPS agreement of the WTO[28], which legitimises private property rights in the form of intellectual property over life and processes entailed in modifying life forms. [29] In addition this is seen by the San as their active response to protection of their rights as set out in the UN Draft Declaration on the Rights of Indigenous Peoples, section 29 of which states that

> "Indigenous Peoples have the right to own and control their cultural and intellectual property."

It remains to be seen how the San will utilise this bioprospecting agreement, and whether the ***sui generis*** protection provided by this contractual form of intellectual property protection will provide an example that may be of interest to local or traditional peoples elsewhere.

## Free-riders and the Bonn Guidelines

Since the P57 patent became public knowledge, numerous companies have jumped on the Hoodia bandwagon and have flooded the international market with a range of allegedly Hoodia-based appetite suppressant products. A recent study alleges that no less than thirty products are known to be in circulation, plus there is a brisk trade in hoodia products on the internet. [30] Many of these claim some or other relationship with the San, or quote the usage of the plant as an appetite suppressant by the San. An illegal or black market in Hoodia has grown rapidly in the past years, resulting in virtual extinction of the plant in many areas. However the San have made it clear that they have only signed a benefit sharing agreement with the CSIR regarding P57, so any company other than Phytopharm or Unilever (the licencees) are unauthorised and in breach of this requirement. They are guilty of a dangerous modern form of "biopiracy", which is defined as the unauthorised extraction of biological resources and/or traditional knowledge from developing countries. [31]

The Bonn Guidelines state inter alia that user countries should consider "measures aimed at preventing the use of genetic resources obtained without the prior informed

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[27] Joint media release, South African San Council and CSIR, 28 October 2004.
[28] General agreement on Tariffs and Trade: Multilateral Trade Negotiations Final Act Embodying the Results of the Uruguay Round of Trade Negotiations, April 15, 1994,
[29] Article 27, "(3) Members may also exclude from patentability:…(b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patent or by an effective sui generis system or by any combination thereof. .."
[30] Briefing paper, Berne Declaration, Zurich.
[31] Graham Dutfield, "Intellectual Property, Biogenic Resources and Traditional Knowledge" Earthscan 2004..page 52.

consent of the contracting party providing such resources." Further implementation of the CBD now requires that countries address their failure to implement an effective regime to prevent the "unauthorised access and use of genetic resources" that is being perpetrated by these "free riders" on the Hoodia train. CBD member states are now required to devise and implement a mechanism or regime that will prevent the sale of biopirated products within their jurisdiction.

**Some ethical considerations.**

In agreeing to a monetary solution to the appropriation of their traditional knowledge, the San have changed their society for ever. This is the subject of much debate amongst both the San themselves, as well as the various individuals who are relied upon to provide advice from time to time.

- Can the provision of money make up for centuries of domination and human rights abuse?

- Will the need for leaders to manage and distribute large sums of money hasten the process of "westernisation" for the San peoples, an outcome not expressly desired by most.

- Was the sum of 6% on royalties sufficient. Should it have been vastly more?

- Should the negotiators have avoided a monetary compensation system, and instead negotiated a range of education, land and other development benefits?

- How does one equate the San cosmology of collective ownership of culture, with the fact that certain individuals will inevitably excel at the materialistic skills required, and will benefit far more than others. The egalitarian nature of the hunter-gatherer society is thus to be inevitably compromised for the foreseeable future.

- To what extent should the San allow themselves to be influenced or controlled from outside with regard to how they disburse the money? Do the CSIR, or the S A Government, have a legitimate interest in or right to deciding what controls, audits, checks and balances will prevent corruption or manipulation on the benefit sharing Trust? Is such meddling or control not an insult towards the San's collective right to distribute without undue interference? An indigenous grouping faces unprecedented challenges when a new institution is created to manage and control an amount of money far beyond any previous imaginings.

- Should the Trust be allowed to operate according to the San's own indigenous systems of sharing?

- The San leadership is largely foreign to the notions of strict budgets and financial controls. Is this solution not setting them up for disaster? Do any other benefit sharing alternatives exist outside those assumed by "western" institutions?

## 8 CONCLUSION

**The actions of the San in the Hoodia case study have been criticised by many, and give rise to new problems for the San. A powerful case is made for the transformative and commercial power of a patent, albeit in this case based upon scientific "discoveries"made after first gleaning traditional knowledge.**

**The San are now engaged in the daunting process of making the negotiated benefit sharing agreement work. In the process their traditional knowledge systems have come onto the map, and have become acknowledged as an intrinsic asset in their development plans.**

**The greatest challenge for the San lies ahead, namely to ensure that the fruits of their freely given knowledge provide true 'benefit' for their peoples, and encourage more appropriate management of their intellectual property and traditional knowledge in the future.**

Roger Chennells;
2 May 2005