



# Protecting Indigenous Knowledge in South Africa

## Debates on Intellectual Property Rights and Development

By Lidewyde H. Berckmoes



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## **Foreword**

This study was carried out for the Research and Communication Division (DCO/OC) of the Directorate-General International Cooperation (DGIS), Ministry of Foreign Affairs, the Netherlands. The primary objective of this division is to stimulate strategic and effective use of knowledge for development. A conducive environment that stimulates knowledge for development, is crucial. For developing countries, an important source of knowledge is 'indigenous' or 'local' knowledge. This study explores how developing countries, specifically South Africa, deal with intellectual property rights as a means to protect and promote indigenous knowledge as a source for development.

The study represents the final piece of work for the Masters in Advanced Development Studies, organised by the Centre for International Development Issues Nijmegen (CIDIN). CIDIN trains post-graduate students to enhance their professionalism in development cooperation.

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**List of Abbreviations**

ABS	Access and Benefit Sharing
ACB	African Centre for Biosafety
BSA	Benefit Sharing Agreement
CBD	Convention on Biodiversity
CSIR	Centre for Science and Industrial Research (South Africa)
DCO	Directorate for Cultural Cooperation, Education and Research
DCO/OC	DCO/Research and Communication Division (Ministry of Foreign Affairs)
DIGS	Directorate-General International Cooperation (Ministry of Foreign Affairs)
GI	Geographical Indications
ICG	Intergovernmental Committee of Genetic Resources, Traditional Knowledge and Folklore
IK	Indigenous Knowledge
IKS	Indigenous Knowledge Systems
IP	Intellectual Property
IPR	Intellectual Property Rights
LDA	Linkages Development Organisation
NGO	Non-governmental Organisation
NIKSO	National Indigenous Knowledge Systems Office
NEMBA	National Environmental Management: Biodiversity Act
MoU	Memorandum of Understanding
MTA	Material Transfer Agreement
PIC	Prior Informed Consent
POI	Research and Innovation programme
SANBI	South African National Biodiversity Institute
TH	Traditional healer
TRIPs	Trade Related Aspects of Intellectual Property Rights
WB	World Bank
WIPO	World Intellectual Property Organisation
WTO	World Trade Organisation

## Protecting Indigenous Knowledge in South Africa

### Debates on Intellectual Property Rights and Development

#### *Summary*

This study was carried out for the Research and Communication division (DCO/OC) of the Ministry of Foreign Affairs in the Netherlands. The aim of the study is provide insight into the possible role of Intellectual Property Rights (IPR) in realising a conducive environment for Indigenous Knowledge (IK) in order for IK to be created, shared and used for development. To do so, the study explores different stakeholders' positions in the IK and IPR debate in South Africa (as a case study).

The positions of the various stakeholder groups on the importance they see for IK for development and the possible role of IPR in stimulating this, seems founded by ideas on what 'development' actually constitutes. Different issues are at stake: 'free' access to knowledge, profit and sharing of (economic) benefits, acknowledgement of worthiness of IK, equality, and (alternative) development not geared at economic gain but living in harmony with nature. These different objectives that stakeholders aspire simultaneously, hamper the IK/IPR debate. In this study a solution for the impasse was sought by looking at innovation systems.

A theoretical analysis of innovation systems, and the merits and disadvantages of intellectual property rights and the concept of IK, reveal the importance of *interaction* between stakeholders and sources of knowledge for a conducive environment for development. Interaction is stimulated by trust between and capacity of different stakeholders to engage (equally) in innovation processes.

In South Africa these elements need strengthening. Firstly, the current IK and IPR debate is characterised by strong distrust between scientists, policy makers, NGOs, indigenous knowledge holders and industry. Local communities and organisations speaking on behalf of them, often cast the debate in language that compares current IK/IPR practises with exploitation in colonial times and Apartheid. The often very technical response on IPR of policy makers or industry – and ignoring power relations – results in sometimes frustrating and immobile negotiations. Secondly, many local communities lack the capacity to engage in IK/IPR discussions. Whereas amongst some traditional healer groups for example, good knowledge exists on IPR, their organisations are still relatively weak. Competition between different healer groups exacerbates this. Within local communities in rural areas, even basic knowledge on what IPR constitute often lacks.

Despite some strong tensions between the concepts of IK and IPR, it is the position of the researcher that IPR can play (a limited) role for stimulating creating, sharing and using

IK for development – and may even be an opportunity because of IPR' worldwide significance. However, the following recommendations derived from this study should then meet follow-up:

- Investment in capacity building (especially local communities);
- Specific attention to building trust between stakeholder groups;
- Recognition of power relations in process of policy formulation;
- Give time/space for IK to re-establish itself (after years of repression in colonial and post-colonial times);
- Recognise IPR as only one institutional setting: to achieve development goals other settings and measures are urgently needed.

## Prologue

### *A Feel for the Issues*

On January 17th, 2003, *de Volkskrant* proclaimed contentedly “The San-people receive money for ‘weight losing-cactus.’<sup>1</sup> The article discusses the deal made between the CSIR – the South African TNO – and the San people on the sharing of benefits gained through the exploitation of the *Hoodia Gordonii*, a Kalahari desert cactus that contains appetite-suppressing substances. “It seems like *fata morgana*...,” the article starts. The journalist is not talking about the marvels of loosing weight. Instead, the sensation is about this first time that some form of *collective intellectual property* is recognised.

Why is this special, what is the story behind the headline?



Figure 1. San in the Kalahari Dessert, VK 2003

The story on the *Hoodia Gordonii* starts centuries ago when the San first used the cactus plant to suppress their appetite during long hunting trips. In 1963 this practise gained attention from the South African Council for Scientific and Industrial Research (CSIR). They started a research project on the plant. In the 1970s, research shortly came to a standstill, until

technological advancement in the mid 1980s made it possible to extract the active compound. Over the next 10 years, CSIR continued to develop *Hoodia*, and filed worldwide patents to protect its invention of a novel method of obesity control. The first patent was granted in 1997. This was licensed to the botanical pharmaceuticals company Phytopharm for further development. In 1998, Pfizer, the company known for its production of Viagra, had the license for commercialisation. In 2004 it was outlicensed to Unilever (See Annex I for schematic overview).

By this time, the San people had long been out of the picture – so long that the Phytopharm executive in an interview incorrectly proclaimed that the people on whose knowledge the product was based, had been extinct.

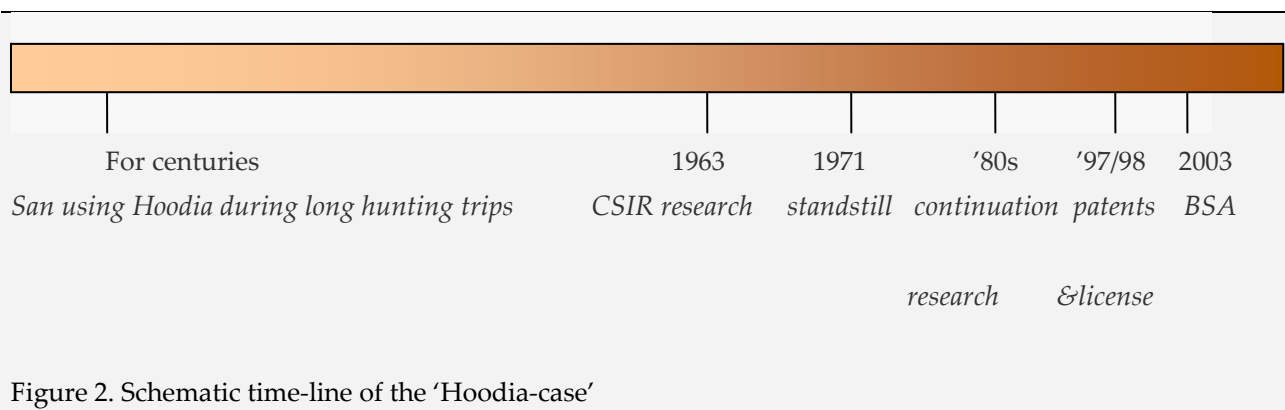
The San were not extinct – was eloquently pointed out by a newspaper reporter from the United Kingdom in 2001. The reporter thus questioned the CSIR Phytopharm-Pfizer collaboration on the *Hoodia Gordonii* compound without involvement of the San. The following huge media attention, resulted in the CSIR meeting the San regularly over the next

<sup>1</sup> “San-volk krijgt geld voor ‘afslank-cactus,” by Hans Moleman, *de Volkskrant*, 17 January 2003.

two years. In the discussions, a benefit sharing agreement (BSA) was negotiated and signed March 24<sup>th</sup>, 2003. The agreement stated amongst others: "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." In other words, the agreement made explicit the contribution of the indigenous knowledge (IK) of the San to the development of an innovation patented by the CSIR.

The *Volkskrant* article of 2003 concluded with the author expressing his hope that this would finally make a difference for the San's living standards. "For the San-people (...) it is hoped that this project will be more successful than other attempts to improve their fate."<sup>2</sup>

The potential of IK acknowledgement in IPR-systems, has since been a topic for hot debate, especially in developing countries. Developing countries, is often argued, have a potential comparative advantage in this regard. Often they are poor in technology, but rich in IK and biodiversity. The enormous assortment of issues discussed in the debate however (e.g. social justice, validity of IK, Benefit Sharing Agreements, protection, and so on) tends to obscure the debate and hinder progress in negotiations: One cannot see the wood for the trees anymore.<sup>3</sup> This thesis aims to provide clarity on the ongoing IK/IPR debate. It will do so by unravelling the different aims and arguments of the various stakeholders. It will tune into the debates in South Africa – where also the Hoodia case was negotiated.



<sup>2</sup> In the conclusion, throughout this study, reference will be made to the 'Hoodia-case.' In the last chapter it will discuss a bit further the current situation of the San and the Hoodia Gordonii.

<sup>3</sup> Electronic interview with senior policy advisor, Directorate Innovation, Economic Affairs, The Netherlands, 17-07-2008.

## Chapter 1.

### Introduction to the Study

#### 1.1 DGIS Interest in the Issues

*“Knowledge is key for development” (Koenders, 2008) – It sounds like stating the obvious Yet, without explicit attention to its application, ‘knowledge’ tends to remain just knowledge. Using knowledge for development proves to be a continuing challenge.*

Urged by the changing context of globalisation, the emergence of knowledge economies and the increasing emphasis on broad innovation systems, recognition is growing for the importance of knowledge for development. Knowledge is seen as a basic ingredient for social and sustainable development (Koenders, 2008). The Netherlands Directorate-General for International Cooperation (DGIS) thus assumes a role in stimulating the production, acquisition and use of knowledge for development. The Research and Communication division (DCO/OC) of DGIS is primarily concerned with this role. DCO/OC aspires to motivating effective and strategic use of knowledge for development. This objective was formulated in the policy memorandum adopted in 2005.<sup>4</sup>

The policy memorandum is based on a systems approach.<sup>5</sup> A systems approach to knowledge assumes that knowledge is generated not only by individual actors, but during interaction processes between actors. Furthermore, actors and their interactions are situated in a certain environment, which can be conducive or be a hindrance to knowledge flows. In the policy, the existence of a plurality of knowledge systems is recognised; knowledge consists not only of what is produced in universities or laboratories but includes, amongst others, indigenous knowledge.

In the externally oriented approach outlined in the policy memorandum,<sup>6</sup> one of the key areas identified is the ‘enabling environment.’ This ‘environment’ should be conducive for creating, sharing, and using knowledge so it can benefit poverty alleviation. Some of the core-themes DCO/OC identified are: knowledge infrastructure; capacity building; research communication; indigenous knowledge; and, intellectual property rights.

#### 1.2 Indigenous Knowledge & Intellectual Property Rights

In 2007 a research project was carried out by DCO/OC on one of her core themes: indigenous

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<sup>4</sup> ‘Notitie Onderzoek in Ontwikkeling,’ Ministerie van Buitenlandse Zaken, 2005.

<sup>5</sup> There is no single definition of systems of innovation. Andy Hall states: “Innovation systems approaches view innovation in a more systemic, interactive and evolutionary way, whereby new products and processes are brought into economic and social use through the activities of networks of organisations mediated by various institutions and policies” (Hall et al., 2004).

<sup>6</sup> DCO/OC takes a two-dimensional approach. The internally oriented approach focuses on knowledge management towards the own ministry and embassies. The priority of the research division however, is on knowledge for development rather than knowledge for, purely, development cooperation. Specifically the focus of the division is on the policy frameworks for knowledge that can be used to reach development objectives. This means that attention is primarily directed at knowledge infrastructure, knowledge circulation and preconditions for knowledge in ‘developing countries.’

knowledge (IK) – also referred to as local or traditional knowledge. The objective of the research was to explore the possible role of IK for development.<sup>7</sup> Recommendations for DCO/OC following from the 2007 research, were primarily geared at a re-conceptualisation of local knowledge and local knowledge holders (Oosterom 2007). In general, agreement is increasing on the need for recognition and protection of IK and the rights of IK holders. Yet, disagreement continues on how to design and implement policy to deal with these issues.

One of the principal discussions in this regard, are those on the incorporation of indigenous knowledge (IK) into Intellectual Property Rights (IPR) frameworks. IPR have an important function in the structures that govern the ownership and control of knowledge. They grant a temporary monopoly over innovations to the innovator, and stimulate ‘disclosure of knowledge’ in return. As such, IPR are believed to play a crucial role in enhancing knowledge circulation and development of new knowledge. This role, generates the importance for DGIS to involve herself in IPR policy in general, and for IK specifically.

**Intellectual Property Rights:** the legal provisions given to persons over their creative endeavours and usually give the creator an exclusive right over the use of his/her creation or discovery for a certain period of time. IPR may include patents; copyrights; trademarks; and, trade secrets. IPR are codified at an international level through legally binding treaties.

Box 1.

(Hansen & Van Fleet 2003)

### 1.3 Aim of the Study

Within DGIS, DCO/OC is particularly concerned with IPR because of their importance for regulating protection of and access to knowledge in areas of development. Insight into policy concerns around IPR however, remain limited. This is related in the first place to the complexity of the field. The different dimensions – social, economic, legal, and moral – and the multitude of actors involved, hamper clarity on issues and progress in decision making at all levels. Additionally, the different opinions and understandings of concepts used and objectives formulated by the various stakeholders, culminate in heated but immobile IPR discussions. This is specially the case when IPR are considered in relation to IK; a second concept that can also create confusion (What does it mean? What are the criteria? Whose knowledge is it?).

The study presented here aims to create clarity on the different stakeholder objectives associated with IPR and related concepts in the field of IK. Insight into these objectives help answer the question that interest DCO/OC most:

*“What is the possible role of IPR in realising a conducive environment for IK, in order for IK to be created, shared and used for development?”<sup>8</sup>*

<sup>7</sup> I refer to this research document (thesis) conducted by Marjoke Oosterom (2007) for an in-depth discussion on the concept of indigenous knowledge and its role for development.

<sup>8</sup> As will be shown in the discussions later, the understanding of development, and the ideas on the type of benefit IPR should enable, is important here.

The study looks specifically at the perceptions and aims of various stakeholders in the field of IK on medicinal plants in South Africa. South Africa is presented as a case study; an example of a country in development that grapples with the operationalisation and implementation of multilaterally agreed IPR provisions as well as IK understandings. The study builds on the research conducted last year (Oosterom 2007) and broadens insight into both (IPR and IK) interlinked key areas for DCO/OC.

#### **1.4 Structure**

In the first section of this study, the relevant theoretical considerations will be discussed. Focus will be on the connections between development, innovation and IPR systems, and the suitability of including IK within this framework. The aim is to identify some provisions that would lead to an 'enabling environment' conducive for creating, sharing and using IK for development. The second chapter will look into the fieldwork findings. The methodology applied in the fieldwork research will shortly be discussed as well. Central in the chapter are the different positions of stakeholders in the debates in South Africa. A case study around IPR and knowledge concerning the South African indigenous plant *Pelargonium sidoides* and *reniforme* will feature as an illustration of positions within the debate. The concluding chapter, chapter four, will analyse the different roles IPR can play for an enabling environment for IK in South Africa. Additionally, attention is paid to implications of this study for DGIS' effort to stimulate strategic and effective use of knowledge for development.

## Chapter 2.

### Theoretical Considerations : Debating Development

This chapter aims to provide insight into some of the relevant theoretical discussions for the study of intellectual property rights and indigenous knowledge in the light of development. Insight into these discussions help understand the issues and debates outlined in the remaining of the thesis. Moreover, it helps understand some of the conditions required for a conducive environment for indigenous knowledge in development in South Africa. The chapter starts with a discussion on the ideas on innovation and development.<sup>9</sup> This is important specifically because theories on intellectual property rights are usually discussed in reference to innovation.<sup>10</sup>

#### 2.1 Development and Innovation

Over the years, different models to achieve development were propagated.<sup>11</sup> Yet, as both state-centred and market-centred models proved inadequate, in the 1990s questions rather than answers dominated development thinking (Arocena & Sutz 2002). An alternative for these models that denies the existence of one best practise or unique key factor concerning development strategies, comes to the fore through the concept 'innovation systems' (Johnson and Lundvall 2000 in: Op.cit: 5).

**Innovation:** innovation refers to the creation, diffusion and use of new ideas applied in the economy. In most markets, not to innovate means continuously to lose market share and income.

Box 2.

(Muchie et al. 2003: 2)

The use of this concept can be traced back to 1841, in the work of Friedrich List. The concept was developed as a tool to analyse industrial and post-industrial economies (Muchie et al. 2003: 4). But with some adaptations, Muchie et al. (2003) argue, the concept can be useful in developing countries as well. After all, innovation is assumed to be an important part of the long-term answer to fighting poverty, disease and hunger in developing countries (Commission of the European Communities 2008).<sup>12</sup>

Until the end of the Second World War, policy for international competitiveness and economic growth was based on a linear model of innovation that focussed primarily on

<sup>9</sup> Development here is primarily understood as economic development. Later in the chapter, this particular understanding of development will be looked at further.

<sup>10</sup> In concordance. the Research and Communication division of DGIS wishes to gain insight into her possible role with regards to IPR in the framework of her Research and Innovation programme (POI).

<sup>11</sup> Unfortunately, this study cannot describe extensively the developments in thinking on the role of knowledge for development. Please refer to the World Bank Development report of 1998/1999 for an elaborate description.

<sup>12</sup> The 2008 Global Economic Prospects Report of the World Bank (WB) argues in this regard that most of the growth in developing countries can be attributed to technology, in the widest sense (WB 2008).

scientific research. The assumption was that if investment in scientific research took place, new technologies would be created, and, when these were transformed into new products, the result would be strong competitiveness and economic growth (Muchie et al.:3).

In the context of developing countries, the idea was similar: the systems of innovation were viewed as collections of Science and Technology Institutions. These would act as the basis for technological development. Focus was on the production of new knowledge (Clark 2002: 354). In the case of agriculture for example, the idea was that specialist agricultural research organisations would produce scientifically validated technologies that farmers and others would subsequently use. Exactly how knowledge would be put into use and how scientific resources would integrate with the rest of the economy, was largely neglected (Hall 2005: 612).

**Systems of Innovation:  
A Multidimensional Concept**

- Innovation is a *process*
- Many stakeholders
- Different sources of knowledge;
- Institutional settings shape innovation processes;
- Sets of policies shape innovation processes
- Interaction is key

Box. 3.

(Hall 2005; Clark 2002)

Recent innovation literature breaks with these traditional views. It highlights the potential of a wide range of actors to the innovation processes (Arocena & Sutz 2002). Furthermore, it stresses the need for greater 'connectivity' between the different 'nodes' of innovation systems (Clark 2002: 354) and thirdly, it pays specific attention to both the production of knowledge and putting that knowledge into use (Hall 2005: 614). Thus, important is not only the creation of 'centres of excellence' – as was suggested in the field of agriculture in developing countries – but also how the work of these centres integrate and interact with other sources of knowledge in the

sector or country (Hall 2005: 614). This entails specifically that the quality of linkages and relationships between firms and knowledge institutions are important for innovation. "The single firm operates in a local and national environment and this environment forms an innovation system that may be more or less supportive to its innovative activities" (Muchie et al. 2003: 3) – See Box 3.

To tackle policy questions in developing countries, this 'new' concept of national systems of innovation increasingly plays a role. It is translated into programmes directed at capacity development. The original concept is broadened to encompass more sources for innovation so it can be appropriate in non-industrialised countries, such as those in Africa (Muchie 2003: 5). In this regard, given this study's focus on IK, the acknowledgement of the need for inclusion of different actors and integrating different sources of knowledge, is especially interesting (Hall 2005).

## 2.2 Countering Inequality

*“Today we are living the transition to the knowledge society, the economy of developed countries is solidly based on science, technology, innovation and advanced education. ‘Developing’ countries are ‘the rest,’ those unable to use knowledge – its generation, transmission and application – as a fundamental tool for economic growth and social improvement.”*

*(Arocena & Sutz 2002: 3)*

The concept of innovation systems, creates possibilities for strategies aimed at improving the use of knowledge for development. Therefore, the concept may contribute to closing the gap between developed and developing countries. At a national level, the concept also generates a more inclusive approach to innovation; including a variety of actors and different sources of knowledge. But beware, the concept should not be mistaken for a heuristic tool for inequality: “[Innovation systems’] configurations affect unequally different social groups, allowing better possibilities for some of them and threatening others” (Arocena & Sutz 2002: 7).

Inequality is fostered by different aspects. First, the patterns of growth or levels of well-being are informed by knowledge asymmetries. Secondly, and possibly even more important, there is the so-called ‘learning divide’ (Arocena & Sutz 2002:8). The capability to learn – to know what to do with information – is socially unequal (Castell in Op.cit.: 11). It is related to education and participation in activities that at the same time demand and generate advanced capabilities. Consequently “the growing influence of learning processes in the distribution of social power and related benefits, reinforces inequality as a generator of inequality” (Op.cit.:14).

A third aspect relates to the features of social organisation such as trust levels, norms effectively respected and interaction networks – sometimes referred to as social capital (Clark 2002). Clark argues that well-organised and cooperative knowledge markets enhance innovation and change. Conversely, when a system is formal, rule-bound, hierarchical and where co-operation between organisations is viewed with resentment and suspicion, positive socio-economic impact is unlikely” (Clark 2002: 363). Sørensen showed in this respect that in the context of Ghana, the lack of trust between and within small businesses formed a huge barrier to innovation processes (in Muchie et al. 2003: 293).<sup>13</sup>

Knowledge and learning asymmetries and (lack of) stocks of social capital tend to be self-reinforcing (Putnam in Op.cit.: 15). Asymmetries between countries and within countries therefore risk growing – a development that has been signalled in many studies relating the processes of globalisation (Appadurai 2000; Commission of European Communities 2008). In efforts to alleviate poverty, strategies aimed at reinforcing innovation capacity should therefore give specific attention to the issue of inequality.

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<sup>13</sup> Connectivity between different ‘nodes’ of the innovation system should therefore ideally be ‘horizontal’ (Clark 2002: 266) and characterised by trust and cooperation (Sørensen in Muchie et al. 2003).

### 2.3 Intellectual Property Rights

Literature on innovation systems argues that policy and institutional settings – i.e. sets of common habits, practises, rules or laws that regulate relationships – shape innovation processes (Hall 2005: 612). In this section the focus is on one of these settings: IPR. Specifically, some of the current debates on the assumed roles of IPR for innovation processes will be discussed.

The major argument given for the existence and the working of the IPR system, relates to its effect on innovation and economic growth (Encaoua et al. 2006). This argument is based on the ascription of two characteristics to knowledge as a public good: non-rivalry and non-excludability. Non-rivalry refers to the fact that the amount of knowledge available to one user, does not decrease when others use it. Once produced, it can be used by others than those involved in its initial production. The character of non-excludability refers to the fact that once it is produced, others cannot be stopped from benefiting from it. As a result, everyone can use it *unless* exclusive rights legally protect it (Ibid; Kaul et al. 1999).

These legal rights are believed to be desirable to overcome the market failure that results from these two characteristics. Private incentives that guarantee that the innovator will be able to generate profit and return for her efforts, are needed to stimulate production of socially valuable knowledge (Op.cit.: 1425). In this sense, patents for example – as a widespread mode of IPR – are seen as a motivation for useful inventions as they grant a temporary legal monopoly over the use, production, and sale of an invention, discovery, or innovation (Hansen & Van Fleet 2003). Aside from this ‘invention motivation’ theory, Mazzoleni & Nelson (1998) distinguish three other ‘theories’: induce commercialisation theory; information disclosure theory; and, exploration control theory (See Box 4). Aside from the advantages of the IPR system for development and innovation, IPR also entail social and economic costs – also described in Box 4 (Mazzoleni & Nelson 1998: 274).<sup>14</sup> To achieve development, costs and benefits obviously need to be balanced. A risk is indeed that stringent protection might hinder rather than stimulate technological and economic progress (Mazzolini & Nelson 1998; Arewa 2006).<sup>15</sup> To understand this ‘balance’ for developing countries specifically, it is important to look at how the process of globalising the IPR system.

The groundwork for the current world economic, monetary and trading system was laid at Bretton Woods in 1944. The aim was to avoid a recurrence of the pre-World War II economic chaos. The system was finalised through several rounds of negotiations, the last of which was the Uruguay Round in 1994.<sup>16</sup> The Uruguay Round culminated into the formation

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<sup>14</sup> In this regard, it should be noted that IPR, of course, are not the only way to protect knowledge or inventions.

<sup>15</sup> The latest trends in IPR legislation show an expansion and strengthening of the protection of inventions. This urges critical reassessment of the balance between costs and benefits (Encaoua et al. 2006).

<sup>16</sup> In the negotiations, first only a relatively small group of countries in ‘the North’ sat at the table. Only later were other countries, including developing countries, involved as well.

### Theories on Costs and Benefits of the Patent System

- **Invention motivation theory:** Benefits: economic incentive to innovate. Costs: monopoly (resulting in e.g. high prices for products or deterring others from inventing themselves and using)
- **Induce commercialisation theory:** Benefits: early stage-patent provides assurance for economic rewards of further development. Costs: monopoly (e.g. restricted use by others)
- **Information disclosure theory:** Benefits: patents as vehicle for disclosure and to generate quick and wide diffusion of the technical information underlying inventions. Costs: possibly in actual facilitation of technology transfer (e.g. costly; time consuming procedures)
- **Exploration control theory:** Benefits: follow-on innovations without risk of 'wasteful mining' of the prospect or 'over fishing of the pool'. Costs: limited diversity (different innovators would possibly come up with different things)

Box 4.

(Mazzoleni &amp; Nelson 1998)

of the World Trading Organisation (WTO) and the incorporation of IPR into the existing world trading system.<sup>17</sup>

A dominant ethos underlying the system, has been advancing global free trade. It was presumed that all parties involved in trade, would benefit from such international system. The reality of the implementation however, is that not all involved parties gain from it. This is partly a consequence of the fact that the free trade accords are negotiated and implemented in a world of power asymmetries and webs of history and culture. These, as well as asymmetries in competitive advantage including scientific, technological and institutional capacity, often condition the assumptions and relationships of participants in the trade negotiations (Arewa 2006).

Consequently, discussions started to flourish on the inequality of costs and benefits of the IPR system for developing countries (Arewa 2006: 157). In these discussions, a common argument against the existing IPR system is that it reflects 'Northern realities' and does not allow for an effective participation of developing countries in the global IPR arena. Inaccessibility to knowledge and innovations through the granted temporary monopolies, is seen as a primary cause. Furthermore, developing countries often cannot benefit from the protection and incentives of the IPR system, because of high costs to file a knowledge claim and a lack of capacity and know-how. As such, "a too rigid market-based approach to development, and more specifically to intellectual property rights, is keeping Africa and other LDCs from climbing the ladder of development" (Minister Koenders, 28-02-2008). Another argument against the current IPR framework, is related to the position of IK within it. This will be explored in the next section.

<sup>17</sup> – Through the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement). The TRIPs Agreement was developed in order to give adequate and effective protection to intellectual property rights worldwide. Within the TRIPs Agreement, global minimum standards for IPR are established. For a historical view on the role of the World Intellectual Property Organisation, please refer to Professor May, 2006.

## 2.4 Tensions between IK and IPR Systems

*“A lot of poor countries generate precious, refined things in culinary, artisan and artistic areas – and surely in the field of crafty clothing and language use. Such refinements in daily life show huge practical humanism en longing for perfection; but in the classification of developed countries, it does not count: indeed, it is not even noticed.”*

*(Joseph Ki-Zerbo in Föllmi & Föllmi 2005)*

Box 5

The possibility of applying the exiting modes of IPR – such as patents, copyrights and so on – to indigenous knowledge (IK), has been extensively explored within various organisations, such as the World Intellectual Property Organisation (WIPO), and by numerous researchers working in this field (See for example Correa 2001; Hansen & Van Fleet 2003; Mathur 2003; Van Beek & Jara 2002). Most of the findings confirm that there exist tensions between what the IPR system was designed to protect, and IK. These tensions stem in the first place from what IK refers to.

The term ‘indigenous knowledge’ is derived from its relation to indigenous peoples. Different authors have tried formulate a definition for IK. Hansen &

Van Fleet for example, argue that it “is the information that a people in a given community, based on experience and adaptation to a local culture and environment, have developed over time, and continue to develop” (2002: 3). In this definition, IK is attributed to a particular group, related to the direct environment in which people live, and is viewed as an ongoing process (See for instance Warren 1995 in Oosterom 2007: 8).<sup>18</sup> Van Beek & Jara (2002) came up with some additional qualities. To them, IK is:

- Practical (i.e. survival oriented)
- Factual and detailed (i.e. with crystallised views of characteristics and exigencies of crops)
- Personal (i.e. knowledge concerning own fields – soil, sun, need of water et cetera)
- Relational (i.e. practical engagement of the individual in complex relationships with other members of his/her group, flora and fauna)
- Constitutive (i.e. knowledge shapes the knowing person)

These characteristics have the effect that IK “may suffer from a certain structural amnesia, as the results of past trial and error may be quickly forgotten” (Op.cit.: 41). Moreover, the level/scale of IK is foremost *local* (Ibid).

The characteristics of IK, as an open system of permanent information assessment (Op.cit. 40), differ considerably from what has generally been considered ‘knowledge.’ From that – scientific – perspective, knowledge carries the attributes of inconvertibility, objectivity, rationality, testability, and finally, replicability or verifiability (Purcell in Oosterom 2007: 5). In the design of the IPR system, this difference has had significant consequences for the

<sup>18</sup> Some people, like Sillitoe, propose a more elaborate working definition of indigenous knowledge, including different domains and ways of transmission for example (2002 in Oosterom 2007).

inclusion, or rather exclusion, of IK (Arewa 2006: 160, 161). Indeed, exclusion stemmed from the fact that IK was not merely considered different, but judged to be worth less as well (Arewa 2006: 161).

## 2.5 Changes in Perceptions of IK

*"[The] tight architectonic' woven together by the confluence of the ideologies of science, development and modernity (...) had, over time, created a cognitive prison wall into which were cast the academic and policy communities [- excluding IK]."*

(Hoppers 2005: 13)

Since colonialism, the devaluation of IK forced it to situate in an invisible, informal regime. The denial of space, resources and recognition caused IK to be systematically erased (Hoppers 2005: 22). The use of the term 'indigenous' today, still reflects this position of IK: 'indigenous' is primarily used for minority groups, living in a country dominated by an incoming allochthonous majority (2005: 36). 'Indigenous,' furthermore, often points to defencelessness and vulnerability of the minority (Ibid).

The connection to marginality and suppression nonetheless also led, as a reaction against it, to increasing legal and political status of the term 'indigenous' in policy and legislation. As such 'indigeneity' has become a resource for claims on civil, cultural and political rights, as well as a resource for economic profit (Oosterom 2007; Van Beek & Jara 2002: 45; Comaroff & Comaroff 2007). Some groups of people have been successful in making use of these new possibilities (Comaroff & Comaroff 2007) others not or still try (Oosterom 2007).

Aside from the possibilities of IK that stem from claims on rights or commercialisation by defining things as indigenous, the *content* of IK is also gaining recognition as a source for innovation. Correa for example, argued that Western science has become more interested in IK and realised that it may help to find useful solutions to current problems (2001: 3). The World Bank, in its 'Indigenous Knowledge for Development Program' that was launched in 1998, makes the case for IK as "a significant resource which could contribute to the increased efficiency, effectiveness and sustainability of the development process" (Gorjestani 2000). Hoppers, in concordance, argued for recognition and promotion of IK as a motor for innovation 'from below' (2005: 26,27).

The growing recognition of the potential of IK, however, also poses 'new threats' to IK holders. Indeed, Hoppers (2005) and Van Beek & Jara (2002) state that a tendency is noticeable in which IK seems to become a source of 'exploitation' – in the negative sense (Van Beek & Jara 2002: 54). Hoppers signals in this respect that, "indigenous people all over the world have stated that their arts, crafts, sciences, literature, medicines, music and heritage are the subject of research and eventual commercial exploitation by others, while they are denied not only financial benefits but also respect and official recognition" (2005: 23). Box 6 illustrates this with an example from India.

### Threats to Indigenous Knowledge

The United States Department of Agriculture together with a pharmaceutical research company, obtained in 1995 a patent on a technique to extract an anti-fungal agent from the Indian Neem tree (*Azadirachta indica*). The medicinal value of the tree has long been known to local Indian communities. In India, the news on the patent provoked huge public protest against the US patent. The Indian government undertook legal action, which led to the patent being revoked in 2005.

The success of India in this case, was largely owed to the fact that the indigenous knowledge about medicinal value of the Neem tree had been written down in ancient manuscripts. For much of the African IK, this is not the case. Hence, to show 'prior art' – the term used when previously existing knowledge bars a patent – is much more difficult.

Box 6.

### 2.6 Pro and Con 'Inclusion'

Intellectual Property Rights may be a means to prevent the misuse or misappropriation of IK. It may however also foster and legitimise it. Indeed, there are both ardent proponents and critics of extending IPR to IK (Correa 2001:9).

Critics argue that IK is in essence incompatible with the (Western) concepts of IPR. Van Beek & Jara for instance, speak of 'recolonisation': "to an extent, the present discourse on property rights, intellectual and cultural rights 'recolonises' parts of the world (...) The point here is that the minority group will have to (...) modify its discourse to fit the dominant one and in so doing redefine itself" (2002: 44,45). In this regard, IPR 'freeze' IK and change it into bits and items.<sup>19</sup> The holism is lost in the process. In other words, incorporation of IK into the IPR system, transforms or even destroys the very nature of IK (Op.cit: 54). Furthermore, the process of productivity, of generating knowledge, can never be patented or protected (Ibid). Other arguments of opponents are, first, that by bringing communities and their resources into the fold of the market economy, they could be overwhelmed and ultimately be destroyed. Secondly, opponents with a more practical stance argue that given the difficulties inherent in establishing IPR protection for IK, national IPR legislation and international conventions should just ensure that such knowledge is not unduly appropriated and preserved outside the IPR system (Correa 2001: 9).

Proponents, on the other hand, argue, amongst others, that IK will gain recognition through and can be protected by IPR. Additionally, through incorporating IK into the global trading system, developing countries and their communities gain new opportunities for innovation and development (Ibid.).

These and other arguments will be explored more extensively from the point of view of different stakeholders in the following chapters.

<sup>19</sup> Van Beek & Jara refer to this process as the 'granulization of knowledge' (2002: 53,54).

## 2.7 Concluding Remarks: On Development

In this chapter, I have explored current theoretical thinking on the role of innovation and IPR for development. Additionally, I have outlined some of the ideas in literature on why IK should or should not be included in these frameworks and approaches. In the arguments pro and contra such inclusion, it is clear that the understandings of what development is, play a crucial role. Although an extensive discussion on these understandings is not possible within the limited space available in this thesis, let me shortly reflect upon it. Indeed, these ideas underlie much of the arguments of the stakeholders' views discussed in the following chapters.

Different actors understand 'development' as different things. A quick scan of the understandings of the concept throughout history underlines this. The origin of the concept lies in the rise of rationalism and humanism in the eighteenth and nineteenth centuries. Development as change became understood as a directed and logical form of evolution: a linear, orderly process (Potter et al. 2003: 6). 'Modernist' development thinking was *the* approach in the 1950s, and up to the late 1970s it was primarily viewed in terms of increasing incomes and overall national levels of economic growth (Op.cit.: 15). This view became heavily criticised however, with arguments for inclusions of other positive outcomes such as the provisions of basic daily needs, and the importance of empowerment. Some critics argued against the whole idea of development, for the reason that if anything, it was an endeavour of subordination, creating widening spatial inequalities, undermining local cultures and values, and perpetuating poverty (Op.cit.: 4). So, today, an important theoretical view is that development can mean all things to all people: "There can be no fixed and final definition of development, only suggestions of what development should imply in particular contexts" (Hettne in Potter 2003: 21).

In policy and practise however, it seems that an ideal of what development is or should be, is needed for the formulation and implementation of it. Dominant ideas on how to achieve innovation and development as described in this chapter, favour the strategy of integrating developing countries into the global world system (World Bank 2008, Mestrum 2002). Incorporation of IK into the global IPR framework, is strongly linked to this idea. But is this then a form of subordination – "recolonisation" (Van Beek & Jara 2002) – undermining local cultures and values, or should we see it as a positive change of the good kind of 'development'?

Reading these questions might lead you to decide already that perhaps IK should just not be included into this so-called 'Western' IPR framework. Or it would lead you to think that taking the remarks too seriously will just lead to bogus romanticist development strategies. I urge you to wait a little longer with deciding – at least until after the various stakeholders' perceptions have been explored. For now, the challenge that continues, is to find an answer to the question of how to best realise a conducive environment for IK, in order for IK to be created, shared and used for and development?

## Policy Frameworks

### International agreements

There are many different international agreements that discuss issues of indigenous knowledge, intellectual property rights and biodiversity. The most pertinent are the TRIPs, the CBD and the United Nations Declaration of the Rights of Indigenous People. WIPO is the UN body that deals specifically with the issues raised in the IK/IPR debate.

**TRIPs:** The Trade Related Aspects of Intellectual Property Rights is administered by the World Trade Organisation (WTO). The agreement sets the global standards for domestic intellectual property rules. TRIPs requires all its members to recognise and enforce minimum standards of intellectual property rights protection. Some developing countries have pointed out contradictions between the TRIPs and the CBD, and argue that they must be reviewed (Correa 2001).

**CBD:** The United Nation's Convention on Biological Diversity is the first international treaty that acknowledges the importance of indigenous knowledge, innovation and practise. The focus thereby is on their role for conserving and developing biodiversity. The Convention requires Parties to the Convention, such as South Africa, to pass adequate legislation to protect IK, promote fair and equitable transfer of technology including IK, and the sustainable use of biological resources. **Article 8(j)** is especially relevant:

*"Each contracting Party shall, as far as possible and as appropriate:*

*Subject to 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"*

(<http://www.cbd.int/programmes/socio-eco/traditional/>)

The **Bonn Guidelines**, crafted by the Conference of the Parties to the CBD, are intended to support Contracting Parties and other relevant actors in shaping national policy legislative and administrative frameworks on Access and Benefit Sharing (ABS) and/or negotiating bio-prospecting projects in line with the principles of the CBD (GTZ 2006). Models are provided on prior informed consent, mutually agreed terms, and dispute settlement mechanisms. International negotiations continue on a binding international regime on ABS – target date is set at 2010.

**United Nations Declaration of the Rights of Indigenous People:** This document discusses the rights to sovereignty, culture and tradition. It recognises the marginalisation of indigenous communities and the urgent need for the promotion and protection of the inherent rights of indigenous communities to their cultural identity, including their own social and economic structure, spiritual traditions, histories and philosophies (Koyama & Mayet 2007). The declaration is non-binding however.

**WIPO/IGC:** Since 1998, The World Intellectual Property Organisation has undertaken a programme that explores emerging intellectual property issues. The intergovernmental Committee of Genetic Resources, Traditional Knowledge and Folklore (IGC) was set up as the forum for, amongst others, the protection of traditional knowledge, innovation and creativity; biotechnology and biodiversity; and, protection of folklore. As a result, many documents have been written that contribute to a deeper understanding of these issues – some people argue however that there is too much documentation, as political discussion is hindered by the volume and complexity (GRAIN 2004).

### South Africa: National policy framework

The Body of South African legislation applicable to indigenous knowledge, bio-prospecting and biodiversity is highly fragmented. Some of them include: the Constitution of the Republic of South Africa; National Environmental Management Act 107 of 1998; Environmental Conservation Act 73 of 1998; Maritime Zones Act 15 of 1994; National Environmental Management: Protected Areas Act 57 of 2003; Patent Act 57 of 1978; Indigenous Knowledge Bill/ Patent Amendment Act 20 of 2005; National Environmental Management: Biodiversity Act 10 of 2004; and, Traditional Health Practitioners Act 35 of 2004. Here, I will discuss only the Biodiversity Act of 2004 and the Policy Framework for the Protection of Indigenous Traditional Knowledge Through the Intellectual Property System of 2008.

**NEMBA:** Recently, the South African government enacted the National Environmental Management: Biodiversity Act 10 of 2004 (the 'NEMBA'). The Act forms the basis of South Africa's domestic obligations that follow from the CBD. Currently, NEMBA is the main legal platform on which biodiversity conservation is based in South Africa.

The act provides, amongst others, for the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; and the fair and equitable sharing of benefits arising from bio prospecting involving indigenous biological resources. As such, the Act makes it a criminal offence for anyone to bio prospect without a permit and to export indigenous biological resources with the purpose of bio prospecting. It requires that bio prospectors provide evidence for prior informed consent (PIC) of the communities who need to provide access to IK, a material transfer agreement (MTA) and, a benefit sharing agreement (BSA). The Minister responsible for the environment, needs to approve these agreements to check the 'fairness' of them.

Critique on this Act has been that the legislative implementation has progressed very slowly, which rendered the protection of indigenous communities in terms of their knowledge inadequate for a long time (Koyama & Mayet 2007). Secondly, some aspects relating to the interpretation, implementation, and enforcement of the NEMBA remain unclear (Kotze & Du Plessis 2006, <http://www.austlii.edu.au/au/journals/QUTLJ/2006/2.html>). Thirdly, the strictness of the Act has led to resistance from various stakeholders, such as researchers, in South Africa, who argue that the Act requires the impossible.

**Policy Framework for the Protection of Indigenous Traditional Knowledge Through the Intellectual Property System:** In May 2008 the Department of Trade and Industry (DST) published in the Government Gazette this policy for public comments (open until 15-06 2008). The draft policy provides the framework recommended by DST for the Protection of Indigenous Knowledge through IPR. It describes how trademarks, geographical indications (GIs), patents, designs and copyrights can be used to protect IK. For instance, **GIs** are seen as able to provide protection of certain names/features associated with IK, e.g. Rooibos and Honey Bush tea. The policy acknowledges however that IPR are not the only tool that can protect IK.

### Concluding Remarks

The use and exploitation of IK has become a topic of discussion in many national and international forums. A lot of research has been conducted on the issues, new policy and legislation is designed, and existing ones are amended. In this process, a large number of national and international different actors are involved. In South Africa for example, different systems for 'protection and promotion' of IK, fall under different departments. It takes a lot of time and efforts to deal with all the issues in a cohesive manner. The different objectives and priorities, as well as the enormous complexity of the issues, result in very slow progress towards an adequate framework for IK/IPR.

## Chapter 3.

### South Africa: Positions and Motivations of Stakeholders

This chapter looks into the debate on intellectual property rights in the context of indigenous knowledge in South Africa. The debate is often characterised as highly complex and controversial. The aim of this chapter is to create more clarity in the debate. It will do so by exploring the various stakeholders' positions and motivations. This will lead to a more productive and balanced IK/IPR debate in which all stakeholders' interests can be taken into account.

Two issues should be noted however. First, arguments pro and against IPR as a tool to protect and promote IK, do not necessarily neatly correspond to *all* actors within the particular stakeholder groups. Nevertheless, insight into the positions according to group is important because of the relevance of the social/power positions of these categories in society for their motivations and positions in the debate.<sup>20</sup> For instance, the motivation of the 'need to conserve indigenous knowledge,' cannot be understood without taking into account the low social position of indigenous knowledge holders for centuries.<sup>21</sup>

Secondly, arguments pro and against IPR are not always based on clearness of the actual consequences of including IK in the IPR system. Indeed, not IPR as such, but the various modes, interpretations and enforcements of IPR laws, eventually shape the outcomes.<sup>22</sup> Consequently, a vote for or against IPR only gives limited insight if stakeholders are not fully aware of the consequences of particular IPR modes, laws and enforcements – which is most often the case. Focus in this study therefore, will be especially on the aims and objectives of stakeholder groups rather than simply on the votes 'for' or 'against.'

The chapter starts with a short personal description of the methodology applied. This helps to understand and place the data presented in the remaining of the chapter. Subsequently, each stakeholder group will be discussed separately. Three questions are central:

- 1.) *What role for IK in Development does the stakeholder see?(Development objective)*
- 2.) *Why is the stakeholder interested in the IK/IPR debate ? (Stake)*
- 3.) *What can be the role of IPR in reaching the objectives? (Role)*

Answers on these questions will help to gain insight into the primary overall objective of this study, which looks at the enabling environment for IK in Development.

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<sup>20</sup> The categories for the stakeholder groups used in this paper follow common categorisations used in amongst others, South Africa.

<sup>21</sup> In some articles on related issues an approach is chosen that looks in the first place at the objectives or arguments, and only later at the stakeholder groups (De Jonge & Louwaars, forthcoming). This highlights the appropriate mechanisms to reach the objectives. It obscures however the relevance of the power relations in both the formulation of objectives and the way the objectives receive or do not receive attention in the debate. This paper therefore chooses an approach whereby stakeholder groups are central

<sup>22</sup> A detailed and technical analysis of the effects of different modes and constitutions of IPR on the protection and promotion of IK is, unfortunately, beyond the scope of this study. The focus of this study is therefore specifically on the interests in or goals for protection or promotion of IK.

### 3.1 Methodology

This chapter is primarily based on the data collected through fieldwork research in South Africa from the 13<sup>th</sup> of July to the 12<sup>th</sup> of August 2008. My base was at the Royal Netherlands Embassy in Pretoria. From here, I made contact with various researchers, NGO activists, government policy makers and Traditional Healers to discuss their ideas on protection and promotion of indigenous knowledge and the role of IPR in this process.

I approached some of the interviewees through contact details I found on the internet. Additionally, some respondents I found through contacts of the Netherlands Ministry of Foreign Affairs, and others through the so-called 'snowball method' whereby one informant introduced me to new informants. In general, it was easy to find informants. In total, I held 25 semi-structured interviews, of averagely an hour, with respondents from various stakeholder groups. I identified five different stakeholder groups: (1) the South African government; (2) Research institutes and Universities; (3) Non-governmental organisations, often representing indigenous communities; (4) Indigenous communities themselves; and (5) Private companies.<sup>23</sup>

Aside from interviews, I participated in a community workshop on IPR in the Eastern Cape. This was organised by a non-governmental activist organisation. The days before and after the workshop, I participated in their internal discussions on motivations and strategies in the context of IK and IPR. This experience provided me with the opportunity to look deep into the different facets of their arguments and motivations against IPR. The information gained through this experience comes especially to the fore in the discussion of the 'Pelargonium case,' later in this chapter.

During the last week of my stay, I also attended a one-week conference/ exhibition on Indigenous Knowledge Systems organised by the South African Government. This gave me the chance to *experience* the IK/IPR debate, which provided insight not only into the arguments and motivations of different stakeholders as such, but also into the atmosphere in which the debate takes place, and the interaction between the various stakeholders. The latter is especially relevant given the importance of interaction processes in sharing, creating and using knowledge – analogously to the features of a successful 'system of innovation' as was discussed in the previous chapter.

Hence, although the fieldwork period was short, I was able to gather a lot of information. Nevertheless, two difficulties may have resulted in the fact that this study should be seen as partial – not the full story. First, because of the controversy of different standpoints in the debate, silence or even hostility to questions on the part of informants was not uncommon. Accusations of theft and betrayal in the discussions, have made it difficult or dangerous to share information with unknown researchers, such as myself. Consequently, at times I did not receive any or not all the information the interviewee had. And sometimes, I

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<sup>23</sup> One could argue that there are more stakeholder groups of course, such as IPR lawyers or specifically farmers using IK. Throughout the fieldwork research period however, I found these five actors to be most relevant, especially considering my focus on IK in the context of medicinal plants.

spent half the time of the interview explaining that I did not intend to 'steal' IK from the interviewee to commercialise it and become a millionaire, but that I only hoped to learn about his or her opinion on how and why IK should be protected.

The second issue is that I had relatively few opportunities to talk to stakeholders from private companies. Unfortunately – probably partly because of the hostility in the current IK/IPR debate – many of them did not respond to my request for a meeting. Time also proved to be a limiting factor here, as it restricted the possibility to invest in gaining trust and access. At the conference/exhibition, I did meet some people working in the pharmaceutical sector however. These were from relatively small South African companies. Only indirectly – and therefore perhaps biased – have I been able to gain information on the positions of large companies or multinationals such as the pharmaceutical company involved in the Hoodia case, or the one that will be discussed later in the Pelargonium case. As the private sector forms an important stakeholder group in the IK/IPR debate, I will nonetheless discuss their motivations as good as possible in this study.

Let us now return to the aim of the chapter: the positions and motivations of different stakeholder groups in South Africa on IK and IPR. The first group is the South African government.

### **3.2 Stakeholders**

#### **3.2.1 The Government: Opportunities for Growth**

In South Africa, both in its national and international activities, IK has increasingly received official attention over the last years. In 2001 a process was initiated whereby legislation and policy issues around IK were examined by the government. This led in 2004 to the first policy paper on the issue 'Indigenous Knowledge Systems,'<sup>24</sup> published by the Department of Science and Technology (Interview with policy advisor, NIKSO, July 2008). In the paper, the importance of and strategy towards IK is discussed. The paper provides insight into the first question, which revolves around the view of the South African government on the role of IK in Development.

An analysis of the policy paper shows that the government signals two roles for IK in development. The first is related to the contribution of IK to the identity of people, especially those who have been marginalised for a long time: "Under apartheid, IKS in South Africa, as well as practitioners within such systems, were marginalised, suppressed and subjected to ridicule" (DST 2004: 10). Redressing the position of IK is therefore part of the objective to ensure equality of all people and contribute to the establishment of an African identity. Implementation of this idea however, remains controversial. What and who is indigenous, constitutes a politically very sensitive issue.<sup>25</sup>

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<sup>24</sup> The referral to IKS rather than IK, seems to be related to the recognition that IK is produced, used, and preserved within a context of interrelated knowledge and traditions. IK, in other words, is not isolated but forms part of a different knowledge 'system.' In the policy paper, this is however not made explicit.

<sup>25</sup> I make a distinction here between the views of IK for development from a national perspective and an international perspective as this is relevant for the elements that are stressed as important. Later I will return to the international perspective.

The second role of IK for development, is perceived in a more tangible way. IK is seen as a 'resource' that can be used to develop new (industrial) products and services (Oosterom 2007: 31). IK is 'extracted' from its context to be used in innovation processes that lead to new or improved products for the market. For instance, an example of where IK can very literally be said to be 'extracted,' is the Hoodia case discussed earlier in this study.<sup>26</sup> The role of IK as a resource for economic growth, is also emphasised by South Africa in the international arena. Here, particularly IK's potential of competitive advantage is cherished: "from the perspective of national competitiveness, in a world that runs increasingly on knowledge, systems of knowledge that are less accessible to others [such as IKS] offer a potential competitive advantage" (DST 2004: 15).

The importance of the IK/IPR debate for the South African government, stems from the role they see for IK in development in relation to identity building and economic growth. Moreover, it is related to the government's fear to miss out on the opportunities offered by IK for, especially, economic growth. For instance, a recurrent issue mentioned in interviews, was the grievance that foreign national or multinational companies successfully exploited the opportunities of IK for profit. South Africa did not managed to get a piece of the pie in many of these cases. Consequently, it is looking for ways to gain more control on the South African 'resources' such as indigenous plants and related IK. Internationally, this is shown in the position of South Africa in the debate on 'protection' of IK: "We South Africa, have a robust role in the WIPO/ICG. [See box 7].South Africa is really aggressive towards developing an internationally binding instrument [for protection of IK]" (Policy advisor NIKSO, July 2008).<sup>27</sup>

The possible role of IPR is then mostly cast in these terms: To protect IK from 'misappropriation' and to provide incentives to South Africans to make use of IK – as a resource. For the latter, primarily research institutes and universities as well as small and medium private companies are seen as important actors (DST 2004: 16). In June 2007 for example, the government published a Draft Bill on IPR from publicly financed research (Koyama & Mayet 2007: 24). The development of the Bill is related to, "the upcoming idea is that currently public institutions do not protect their findings enough" to reap the commercial benefit from it (Researcher, University of Pretoria, July 2008). The Bill provides for the limiting of licensing agreements and the promotion of IPR. With it, the government aims to keep the benefits accrued from IPR in public research, reduce reliance on overseas technologies, build capacity within South Africa, and utilise South Africa's available resources.

The solution sought with IPR in the context of IK is then mostly geared at the objective of economic growth, and less at equality – at least in so far equality is defined in

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<sup>26</sup> The indigenous plant Hoodia Gordonii was examined for her active compounds. These compounds were isolated and subsequently used to develop a new, commercial product.

<sup>27</sup> In comparison to other African countries such as Namibia, Ethiopia or Kenya however, South Africa is said to be still far behind with implementing policy and legislation for protection of IK: "South Africa has been less protective of its resources in the past. In South Africa there is more capacity probably to tackle the issue, but less political will" (Researcher, University of Pretoria, July 2008).

relation to identity rather than ‘economic equality’ between different countries. For the marginalised communities, who, according to the 2004 policy paper, have suffered the most under the oppression of IK over the last centuries, other mechanisms than IPR are seen as providing opportunities for development. The primary mechanisms in this regards are the Benefit Sharing Agreement (BSA) and Prior Informed Consent (PIC).<sup>28</sup> As you read in the prologue, in the Hoodia case, a BSA was indeed agreed upon to ‘uplift the fate of the San’ (Volkskrant 2003).

Primary Objectives	Stake/ Principal Fear	Solution through IPR
1. Equality: - national cultural & economic - international: economic	Loosing out on opportunities IK	1. Protection against ‘misappropriation’ 2. Incentive to use & exploit IK
2. Economic growth		

### 3.2.2 (Public) Research Institutes and Universities: *Development for Humankind*

In this section, the focus is on publicly funded research institutions that conduct research in the area of medicinal plants. The focus on these institutions was chosen because their role in issues around IK and IPR is often contested in the debate, and thus interesting for this study.

The primary mandate of the publicly funded research institutions is the furtherance of education and scientific research (Koyama & Mayet 2004). The role they see for IK in development in South Africa, is primarily linked to the possible impact of the scientific research related to IK they conduct. For example, many institutions are researching indigenous medicinal plants to find ways to address the health care needs of African populations. As a researcher from the South African National Biodiversity Institute (SANBI)<sup>29</sup> mentioned: “One of the programmes is the drug development programme, which aims to develop drugs for African diseases. Like TB, HIV/Aids, Malaria: diseases for which there is probably not a big market as the sick people are often the poor people. Research is thus not attractive for private research companies” (July 2008). This programme relied heavily on the IK concerning the use of indigenous plants for medicinal purposes.

Another important type of research is related to sustainable use of biodiversity. For example, Fort Hare University conducted research into a medicinal plant – *Pelargonium sidoides* – that is used curatively for, amongst others, respiratory diseases. Most commonly, the roots are used for this purpose. Therefore, when used, the whole plant is uprooted and used *up*. In the case of a too widespread usage, this can lead to extinction of the plant. The research looked into the possibility of extracting the curative ingredients from the leaf instead of the roots, so that the plant needs not be used up. Therewith, a more sustainable use of the biodiversity is possible (Professor, Fort Hare University, August 2008).

<sup>28</sup> These are also shortly mentioned in Box 7.

<sup>29</sup> SANBI is a national institute. Its predecessor was the National Botanical Institute (NBI). With the drafting of the NEMBA, it was decided to broaden the mandate of NBI. Whereas NBI was occupied only with botany, SANBI has a mandate for biodiversity and supports the Minister/ the Department of Environmental Affairs and Tourism with the implementation of the CBD – which is regulated through the NEMBA., Box 7.

Especially 'access' to the indigenous plants is therefore important for these research institutions. Access allows them to educate their students on how to perform the research, and, to generate scientific insights relevant for development (Researcher, University of Pretoria, July 2008). The recently introduced policy and legislation for conducting such research however, was deemed too restrictive.<sup>30</sup> The researchers generally did agree with the principle that scientific research should not take place at the expense of local communities, as posited in the 'restrictive' policy and legislation. But, they argued, not only the benefit of local communities as 'holders of IK' is important. Also the interest of the wider public should be taken into account.

This stance may, however, may lead to controversy and criticism. A quote from the director of a public interest organisation<sup>31</sup> in an NGO information booklet on IK and IPR, illustrates this clearly: "The fact that researchers were doing it for the sake of all humanity – as they understand the good of all humanity – is, frankly, irrelevant. Everyone says that. (...) Professionals do not have special rights that allow them to take advantage of local people, or anyone else for that matter" (in Koyama & Mayet 2007: 36). For research institutions and researchers, this means that their role in the IK/IPR debate, has been challenged – which sometimes leads researchers to disengage from the IK 'mine field.' A SANBI researcher explained to me: "The risk is that even though you tried to do good [comply with the laws and agreements], it gets right back into your face. It is not easy to share and deal fairly with the patent..." (July 2008).

*"Everyone now tries to stay clear from this domain full of mines. The socio-economic thing makes the field very emotional. There is a lot of nervousness"*

*(Researcher, July 2008)*

The position of research institutions towards IPR can then be said to be ambivalent. On the one hand do researchers see a negative influence of IPR legislation on the access to genetic resources and IK, at least in the current legislative form. On the other hand, IPR such as patents, can function as a way to gain profit as well as prestige for their findings. The patents held by CSIR in Hoodia case for example, still provide a source of income for the institute. Furthermore, IPR legislation can also function as a way to clear up accusations of theft. With unambiguous rules, it is easier to establish whether a researcher or institute has handled a research project and issues of benefit sharing and consent, fairly. Creating unambiguous rules remains difficult however, as questions on legitimate ownership of IK and on what constitutes 'fair,' are unsolved: With whom to share benefits? Who has the right to decide what is fair.<sup>32</sup>

<sup>30</sup> Aside from restrictive, the agreements are believed to be impossible to comply with (University of Pretoria, July 2008). Some of the obstacles are that BSA should be in place before there is clear sight of the possible benefits that can be derived from the research; that ownership (thus who to negotiate ABS with) is difficult to establish; and, that resources can be found also across borders where legislation is either not in place or at least different from the legislation in South Africa.

<sup>31</sup> Beth Burrows, director of the Edmonds Institute. This is a small public interest organisation focused on environment and technology and headquartered in Edmonds, Washington.

<sup>32</sup> For instance, in the NEMBA, it is posited now that the Minister has the role to decide on what is fair in IPR requests. Most people I spoke to were sceptical about this however.

Primary Objectives	Stake/ Principal Fear	Solution through IPR
1. Research: access for sustainable development	1. Restricted access 2. Accusations of theft	1. Clear legislation as a protection against accusations and way to regulate access (2. Profit)

### 3.2.3 Non-governmental Organisations:

#### *Different Kind of Development*

Non-governmental organisations (NGOs) form, of course, not a homogeneous group in this IK/IPR debate. In this section, the analysis is based primarily on interviews and experiences with two South African NGOs: Linkages Development Organisation (LDA) and African Centre for Biosafety (ACB). Both organisations are, albeit in different ways, engaged in the IK/IPR debate and try to bring forward the voice of local communities/ indigenous knowledge holders.

For these organisations, acknowledgement of IK is seen as a crucial component of development – as acknowledgement is part of redressing the historical marginalisation of indigenous communities. But the organisations do not plead for just recognition, which carries the risk to be lip service without ‘changing’ anything in the lived realities of the communities. Indeed, for them, development must be seen as a substantial change in the social, cultural, economic and legal position of local communities.

In this change, IK and IKS are seen to have a role as a ‘building block.’ As one of the interviewees explained to me: “Traditional institutions are at the heart of African society. They can be the carriers of development. For example, in order to deal with the problem of environmental degradation, you should look into traditional authority institutions, and be willing to learn from them” (LDA, July 2008). ACB stated in this regard that they want to think out of the box and find a new system. “For instance, why are the local communities always the providers. They get some money and that is it” (July, 2008).

Consequently, the primary issue at stake in the IK/IPR debate for this stakeholder group is empowerment of local communities (ACB, July 2008). Communities themselves should own the resources and have a crucial say – even decisive role – in the institutional framework that governs IK (LDA, July 2008). The organisations thus explicitly claim not to act as representatives of the community: “We are not saying what should be, what the outcome should be. What we are doing is only to open up policy space and build capacity of communities so that they can say for themselves” ( NGO representative, July 2008).

On the role of IPR in this context, the position of the NGOs is a bit ambivalent. IPR can be used to protect IK and IK holders from exploitation by large companies: “multinational companies are not happy, because the new patent laws restrict their movement” (NGO representative, July 2008). It can also facilitate exploitation of communities: “At the same time, you have for example ‘Hoodia’: they [CSIR] took the rights

of the community and patented the knowledge. That is bad. Hoodia was a cultural tool” (LDA, July 2008).

Yet, the organisations argue, they are not the ones to decide. Communities themselves should be the ones to decide on what they think of IPR. The following argument in relation to commercialisation of culture and IK is illustrative for this position: “What is happening, is that culture – dance, songs – they are being commercialised. Or with indigenous medicine. They can do it, if people feel like it” (LDA, July 2008).

*“What we do is provide input into policy to inform development processes, to make sure these are not just based on theories from foreign cultures. We want to know how South African indigenous people are ‘wired’.”*

*(Linkages Development Organisation)*

At the same time, from the interviews it became clear that the organisations themselves do have an opinion as well. They feel that IK in itself is incompatible with the principles of IPR (See the position of Van Beek & Jara 2003 in chapter 2). There are two primary reasons for this: (1) IPR governs control over IK, whereas *sharing* should perhaps be central, and (2) an alternative view of development is one that is geared at living in more sustainable ways, rather than at accruing more profit (an important reason for why IPR has been designed).

Primary Objectives	Stake/ Principal Fear	Solution through IPR
1. Justice/ equality 2. Room for alternative ways of development/ living	1. Communities exploited and neglected, again	(1. Communities should decide on whether IPR is a solution) (2. Principally incompatible with IPR exclusive ownership IK)

### **3.2.4 Local Communities:**

#### ***No more Colonial Practises***

Central in this section are the positions of South African local communities in the IK/IPR debate. Given the focus of the empirical research on IK related to medicinal plants, traditional healers (TH) were chosen as the entry point to explore the views of local communities. A methodological reason for this approach, is that many traditional healers are well organised in various associations and play an active role in the debate, while ‘communities’ were more difficult to approach for this matter.<sup>33</sup>

Traditional healers are, erroneously, often seen in policy and research as a homogenous group. South Africa however, comprises many different communities,<sup>34</sup> and also within communities traditional healers may have different priorities, fears and views. Nevertheless, throughout the fieldwork, consensus seemed to exist on the importance of the three following objectives for engaging in the IK/IPR debate: recognition, inclusion, and

<sup>33</sup> See the Pelargonium case study for an example of a ‘debate’ on the topic with a ‘local community.’

<sup>34</sup> South Africa comprises 11 official languages, and in concordance, at least as many ‘ethnic communities.’

preservation. All three are related to their holistic approach to development: a change in the social, economic, cultural and legal position of their communities.

To understand the importance of ‘recognition,’ the historical position of IK and IK holders is crucial. For instance, one of the traditional healers explained: “You must know, in 1936 an act was passed that outlawed traditional knowledge as witchcraft. This meant that we had to practise in hiding, secretly because practising traditional medicine was considered criminal” (Traditional Healer, August 2008). The recently renewed official interest in IK as something of value, is thus considered an important step by the healers. Nevertheless, recognition is still not a matter-of-course.<sup>35</sup> Recognition is also not only dependent on the government. The quoted traditional healer stated for instance, that, “there is a lot of tension between churches and traditional healers. Churches often compare the practises of healers with ‘consulting demons.’ We have to work hard to change the myths, clarify this” (August 2008).

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*“They approach us as window dressers, but we want to be fully engaged!”*  
(TH, August 2008)

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The second element, ‘inclusion,’ is primarily expressed in relation to the way IK is being recognised by the government and research institutions. For example, CSIR welcomes healers to share their knowledge with them, and offers a benefit sharing agreement in return – in the case that a commercial product can be developed (CSIR representative, July 2008). The extent to which the healers are included in the process of ‘testing’ the knowledge in laboratories however, remains restricted. “They should involve us in drug development for commercialisation, and train us” (Ibid.) The need for inclusion is also stated in relation to development of policy and legislation: “The 1983 Act that deals with nature conservation, does not include us. Regulation should be properly revisited. We need to get our legal position right, legal representation ” (Ibid.).

The demand for inclusion thus refers to the fact that traditional healers want to be a part of the process and progress of innovation through, and legislation on, IK. Inclusion is also about economic benefits: rather than giving a *carte blanche* to researchers and companies to make profit out of the knowledge they provided, they want to be sure that they too share equally in the profit – also in terms of employment. Lastly, the demand for inclusion is related to a suspicion they have of researchers, who have the ‘power’ to write off their medicine – because of the strong belief in the working of the scientific method. This is shown for example in the following quote: “You see, in 1994 the Americans claimed after research that the African potato is toxic. They disqualified our knowledge. But in 2000, the same American Research Council is saying it [African potato] is pushing the immune system, after new research... There are several examples of such things happening.” (Healer, August 2008). Inclusion thus mitigates the risk that IK is being devaluated or expropriated.

The third element that was frequently mentioned by traditional healers, was the importance of preserving IK, primarily for future generations. Preservation has two –related

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<sup>35</sup> This is illustrated for example by the fact that the government office NIKSO choose to organise a national exhibition with the message that IK is valuable and worthy knowledge (August 2008).

– components: (1) the knowledge and (2) the genetic or biological resource to which the knowledge is connected. An example is found in the Hoodia Gordonii case. After the patenting of the Hoodia cactus became public, an enormous black market came up in South Africa and the surrounding countries. This had the effect that the Hoodia cactus was threatened with disappearance. For the San people, their use of the plant in their ‘daily lives’ was, consequently, endangered (Lawyer involved in the WIMSA,<sup>36</sup> presentation August 2008).<sup>37</sup>

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*Every time an elder dies, a library  
burns down – Proverb*

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Yet, preserving IK for future generations, does not only depend on the presence of the biological resource. The colonial heritage of denouncing IK as irrelevant or even witchcraft, proved detrimental in other ways. Prohibition of it in schools and the public domain had enormous implications for the possibilities to transfer knowledge to younger generations. Additionally, ‘sharing’ of knowledge became less common: “Traditional knowledge, and the healers, became fragmented during the era of suppression. Traditional healers tended to monopolise the knowledge, to keep it within the family, not sharing with the outside. They protected the knowledge in that fashion.” (TH, August 2008). Devaluation allegedly also led to a growing disinterest amongst youth in learning IK.

The principal stake in the IK/IPR debate for IK holders, is that they will be “colonialised” again (TH, July 2008). South Africans often refer to the country’s genetic and biological resources as the ‘green gold’ – after gold, other minerals and oil, it is now the turn of biodiversity. The fear and grievance of the South African government to miss out on the opportunities of IK, is therefore shared by local communities and traditional healers: “People are stealing our knowledge with the use of IPR, and make money out of it” (TH, August 2008). The difference is, healers were keen to point out that not only foreign nationals and companies are part of this problem. South Africans are keen on commercialisation and patenting of innovations based on IK, even if at the expense of the local communities (Discussion with several THs, August 2008). The discussions on the role South African Research Institutions serves as an example.

A related problem is about ‘access’ to, for instance, biological resources. As already mentioned with regards to the Hoodia Gordonii and the Pelargonium species, commercialisation of these plants can threaten the availability for local communities. A similar issue can be found with regards to ‘sacred sites’ used for rituals for example: “In Venda, there is this sacred site near a waterfall. The government has turned this land into a tourist place. Elders need to officially request access to the place to perform rituals. Some time back, they received only 1 morning. But according to the ritual, the place needs to be left in peace for 2 to 3 days. No-one should come there. But the Government wanted to open it again for the tourists” (NGO worker on her experiences in Venda region).

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<sup>36</sup> WIMSA: Working Group of Indigenous Minorities in Southern Africa, is a San advocacy and network organisation.

<sup>37</sup> Another example can be found in the Eastern Cape, where the commercialisation of *Pelargonium sidoides* and *reniforme* is posing serious problems for the preservation of the plant in the region (Case Study later in chapter).

**Interview Abstract with Traditional Healer in Training:  
Sometimes Limited Capacity for Engaging in the IK/IPR debate**

*Me: What do you think are good ways to protect indigenous Knowledge?*

Student TH: What do you mean, like for businesses against evil spirits...?

*Me: No....hmm*

Student TH: You mean bodily protection?

*Me: No, for example, for pharmaceutical companies. You stand here with different products that you collected. Some companies are developing drugs, medicine, to export to Europe for example, or the local market, how do protect what you know?*

Student TH: I just don't tell. I think that is the only way. You see this bag, it contains a mixture. They cannot see what I put in it.

Box 8.

(NIKSO Exhibition/Conference, August 2008)

The great variety of issues as posited above, lead to the conclusion for many traditional healers that IPR is not a remedy, at least not for all of the issues. IPR can play a positive role for the recognition of IK and for opportunities for commerce or jobs, for example through inclusion as co-owners of patents. The positive role is not automatic however: IPR policy and legislation should be sensitive to the local communities' needs and wishes.

IPR can also create difficulties for IK and IK holders. The most obvious difficulty is that commercialisation and IPR can have an important impact on the access to biological resources – not only because of reasons of 'extinction' but also because IPR legally monopolises certain uses and applications of biological resources. This may pose a threat to IK holders' ability to make use of, and share IK. It can also have the result that 'sharing' of IK within the communities, is restricted even more – as not sharing is stimulated because of economic prospects of monopolising knowledge. The objectives of recognition, inclusion and preservation of IK, may therefore perhaps be better achieved by, or at least need to be complemented with, other measures – for instance projects geared at IK transferral to new generations, inclusion of IK in school curricula, or investments in local (rural) economies.

Primary Objectives	Stake/Principal Fear	Solution through IPR
1. Recognition/ equality	1. Communities exploited, again	1. Recognition of IK
2. Socio-economic development	2. Missing economic opportunities	2. Opportunity for commercialisation/ jobs
3. Conservation/ preservation IK	3. Loss of access to resources related to IK/ sacred sites/ etc.	(3. Potentially harmful for access and preservation)

### 3.2.5 Private Companies: Opportunities

In this section, some of the objectives of private companies will be discussed. Private companies in South Africa, follow the logic of profit, like elsewhere in the world. Development hence, should primarily be understood as economic development.

The role of IK for the private companies, is understood in terms of the potential they provide to produce new products for the market: “So we saw an opportunity, because the laws in South Africa are changing. We produce in our factory, make it [IK] scientific. We use active ingredients and make it ten times stronger.” (Owner of a South African drug company). In this sense, companies are largely in line with the South African government in terms of the ‘competitive advantage’ they see in IK and in the idea of using IK as a resource. ‘The market’ here refers not only to the export market – which is largely the case with *Hoodia Gordonii* and *Pelargonium sidoides* and *reniforme*. Especially the smaller pharmaceutical companies featuring in the research, expressed their ambitions to concur the South African market. Medicine based on IK is widely used in South Africa – some claim 80% of the South Africans go to traditional healers with health problems – which shows that the potential of medicinal products based on IK within the country is enormous.

The primary stake for private companies in the IK/IPR debate has two elements. On the one hand, to develop new commercial product, access to IK and the biological resources to which IK is related, is crucial – which puts companies in a similar position as research institutions. Too strict legislation can hinder their possibilities. No legislation however, may put them in a vulnerable position for critique. Indeed, they have a stake in obtaining and maintaining a good image, as bad publicity may have detrimental effects on their share in the market.

The possible role of IPR then, is a bit ambivalent. From the positive side, IPR can be used to protect their new products. In this sense, it seen as a “business value asset” (Exhibition/conference, August 2008). Furthermore, IPR regulation can create the clarity in legislation they need for investments in new products. From the negative side, IPR legislation can also turn against them. First, as was the case with research institutions, legislation can hinder access to IK or increase production costs through ‘benefit sharing agreements.’ Secondly, as was discussed in the second chapter, especially for smaller companies in can be difficult to gain access to technology protected through IPR, compete with the larger (multinational/foreign) companies for new product development, or even apply themselves for IPR protection. For the latter, the Companies and Intellectual Registration Office (CIPRO) offers her services to help: “CIPRO is available for you.”

Primary Objectives	Stake/Principal Fear	Solution through IPR
1. Profit	1. Access 2. Certainty needed for business	1. Business value asset 2. Clear legislation (3. For smaller companies: too expensive/ too hard competition)

### 3.3 Concluding Remarks

This chapter discussed the different objectives, fears and positions on IK and IPR of the various stakeholder groups in South Africa. As was shown in the discussions, the stakeholders have very divergent ideas. Additionally, the capacity to deal with the issues, especially for the local communities, is sometimes severely limited – although some of the traditional healer groups were extremely well organised. The different expectations and capacities of the stakeholders, are partly related to their positions within society at large – also throughout history. The charged South African history influences the current IK/IPR debate in many ways.<sup>38</sup> The vulnerability of researchers to be accused of being ‘sell-outs,’ or the political reluctance in the country to really tackle also the development-issues that relate to identity and inequality, serve as illustrations. Nevertheless, the increasingly acknowledge of the importance of IK/IPR and related issues in South Africa, do give some hope.

In the next chapter, I will look at the implication of these issues, for the ‘enabling environment.’ But first turn to the long-awaited for Case Study of the *Pelargonium sidoides* and *reniforme*, which illustrates some of the issues raised previously.

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<sup>38</sup> South Africa is of course not entirely unique in this sense. For instance, the colonial history play an important role also in the debates in various other African and South American countries.

**The *Pelargonium* Case<sup>39</sup>: What Money Can't Buy?**

Once upon a time...

In 1879 in Birmingham, a young mechanic of seventeen, Charles Henry Stevens, was feeling ill. The doctor found a serious lesion of the left lung apex, and advised him to go to South Africa for a friendlier climate. In South Africa, Mr Stevens met a Boer who told him about a witch-doctor, Mike Kijitse, who allegedly had a remedy for lung disease. The black-skinned doctor, draped in a blanket and a leopard-skin, welcomed him for treatment. He fetched a bag, from which he took some roots, crushed them between two stones and boiled them in a Kaffir pot. The dose was perhaps a little too strong, for it caused qualms and a lot of vomiting, but the patient persevered. After a short time Mr Stevens felt that his appetite was coming back, and the cough and expectoration were lessened. After three months he no longer coughed or expectorated at all, and felt as well as he had ever been (Dr. Adrien Secheyahé in Koyama & Mayet 2007).

*Pelargonium reniforme* occurs naturally from the Eastern Cape through to Lesotho (farmland, Eastern Cape, 2008).

**Commercialisation**

At his return in England, in 1909, Mr Stevens made and sold a drug containing the roots of these plants, under the name of 'Steven's Consumption Cure.' There was however, never official recognition of the drug because the British Medical Association (BMA) could not locate any scientific information on the botanical properties of the plants. The BMA denounced the cure as quackery.

A Swiss doctor working at the University of Geneva, Dr A. Secheyahé, started testing the plant species – *Pelargonium sidoides* and *Pelargonium reniforme* – over a period of 9 years in the 1920s. The plants were also tested in Berlin's Charité Hospital. Results of these tests were positive and a marketing company was established in Germany in 1939. The product's name became: Umckaloabo. At the same time, several other companies elsewhere in Europe were selling the drug (Koyama & Mayet 2007).

The German company starting filing patents for the various use and extraction methods of the plants in 2002. Three patents were filed by ISO Arzneimittel GmbH & Co KG, and subsequently assigned to Dr. Willmar Schwabe GmbH and Co. KG in 2007. Two of the patents have been granted by the European Patent Office, and one by the German Patent Office. Currently, a fourth patent is pending in South Africa. The market in Europe for Umckaloabo is enormous. In Germany, it is commonly used as a homeopathic remedy for the flu, tiredness, or coughing.<sup>40</sup>

**Stakeholders**

The South African based company Parceval is working together with the Schwabe Group to harvest and export the *Pelargonium* species. The company owns some plantations, but has also been involved in the trade in roots harvested from the wild. Since June 2006, the local government has placed a temporary moratorium on harvesting *Pelargonium* species, as they were becoming increasingly difficult to find. Because of the high demand, rampant illegal harvesting is still a problem however (DST 2008: 34).

For some time, Parceval and the South African Government have been part of a joint venture to harvest the *Pelargonium* species for export (Koyama & Mayet 2007). Recently, the Department of Science and Technology (DST) has raised her ambitions however, and, "aims at establishing commercial production of *Pelargonium sidoides*, primarily for the R&D for the development of value-added medicinal products, as well as feeding into the strong market for the roots of the plant" (DST

<sup>39</sup> *Pelargonium sidoides* and *Pelargonium reniforme*, Geranium species, are difficult to distinguish from each other. Only when flowering, people can tell whether it is *P. sidoides* or *P. reniforme*. Both are used interchangeably in the medicinal treatments.

<sup>40</sup> It is the 20th most sought after medicine in Germany (DST 2008: 34).

2008: 35). They explained to me: “We have been discussing some options with the Schwabe Group, but we have not yet come to an agreement. We do not only want to export the raw products, but ‘add-value’ here in South Africa. So far, they have not agreed” (Medical Research Council/ DST, August 2008). For the country at large and the local communities specifically, this would be a positive step: Growing and processing the *Pelargonium* species

in South Africa creates opportunities for more profit and employment of local communities – in the plantations for example. Their position towards the patent as such, is still developing alongside the legislative framework: “The intellectual property and indigenous knowledge related to *Pelargonium sidoides* require protection in line with the UN Convention on Biological Diversity and the development of South Africa’s bio-industry benefiting indigenous people and the holders of indigenous knowledge” (DST 2008: 35).

The African Centre for Biosafety (ACB) have a different view however. Together with a Swiss-based NGO named Berne Declaration, ACB launched a media campaign in Germany against the ‘biopiracy’ of the *Pelargonium* in 2008, and challenged the two European patents: “...it is clear that some of the claims are based on and taken from the indigenous knowledge borrowed by Charles Stevens from a traditional healer in South Africa (...) Claims of novelty often mask ‘prior art’ where technology and science are involved (Koyama & Mayet 2007). ACB is working together with a local community from the Eastern Cape, near Alice. The Xhosa community consists primarily of the families who had been living and working on a white Boer’s farmland during the Apartheid time. This community is not the only community that knows and makes use of the *Pelargonium* species for their health. ACB sees them as a ‘representative community’ to challenge the patents.

In August 2008, ACB organised a workshop with this community to report back on their activities in Europe. The workshop was frequented especially by the elder women of the community. These women made known to recognise ACB’s claim that ‘their knowledge was stolen.’ They were shocked to hear the staggering amounts of money involved in the commerce. The meaning and implications of



Figure 4. Boys in the Eastern Cape illustrating how *Pelargonium Reniforme* and *Sidoides* are used for medicinal purposes, August 2008

patents was more difficult to grasp however. A – simplified – role play was used to demonstrate this. Especially the patent pending in South Africa seems to be potentially harmful: “When the patent in South Africa is granted, this means that traditional healers may not use the plants to treat TB or other HIV/Aids related diseases, without permission” (ACB role play, August 2008). For an ‘informed’ position on IPR from their part, a lot of capacity building is needed however.

Before the workshop, ACB had a meeting with Parceval. Parceval wanted to work together with ACB to find a solution. A principal difference in their approach seemed to make this impossible however: Parceval was open for benefit sharing, while ACB wanted to reverse the balance of power: ‘Some things money can’t buy’ – unless of course, the community decides so.<sup>41</sup>

#### Patent requirements of TRIPs are:

- *novelty* :publication of the subject matter must not exist prior to the patent application date;
- *non-obviousness*: a person who is skilled in the field should consider the subject matter to be an inventive step;
- *Usefulness*: the subject matter is capable of commercial or industrial application, not merely decorative.

<sup>41</sup> Another stakeholder group that has not been mentioned yet are perhaps the researchers from Fort Hare University, in Alice. Some of the botanist have done extensive research on the plants and the use of the plants in the region, and published various articles on it. Their vulnerability to the critique of being ‘sell-outs’ of local people to the foreign companies, has made some of

## Chapter 4

### Conclusion: Ongoing Process

The last three chapters have portrayed the IK/IPR debate from a theoretical perspective and in practise in South Africa. The debate is complex. But the positions of various stakeholders, their objectives, grievances and fears, are quite clear – although the stakeholders do have different ideas on priorities, and, underlying, views of what ‘development’ should entail. This chapter contains an analysis that should help formulate an answer to the leading question, posed in the introduction: *“What is the possible role of IPR in realising a conducive environment for IK, in order for IK to be created, shared and used for development?”*

Two issues are particularly relevant for this question. First, what kind of development do we expect or want to achieve? When are we satisfied in the extent to which IK is created, shared and used for ‘development’ through IPR? I will look at the current situation in the Hoodia case to explore this issue a bit further. The second issue is about what a conducive environment encompasses. This has been explored through the concept of ‘systems of innovation’ in chapter 2. The question that needs to be answered here, is to what extent IPR enables this environment for IK in South Africa. These two issues will lead to some recommendations, that are discussed in the concluding remarks of this chapter.

#### 4.1 San: Is this Development?

As noted in the prologue of this study, in South Africa, the Hoodia case was the first in her kind. The case is not necessarily seen as the perfect model however. But it can be used to learn from. In this section, the Hoodia case is looked at to learn about the possible influence of IPR on ‘development.’

In the Memorandum of Understanding (MoU) between the San Council and CSIR, CSIR recognises the San as custodians of IK associated with the uses of a large variety of plant materials, including the Hoodia cactus plant. The San, in turn, acknowledge that it was necessary for the CSIR to protect the work that had been done in isolating the active ingredient in the plant and that the CSIR had a right to patent it (19-05-2008, <http://filer.case.edu.ij3/authorship/hoodia.html>). The San would receive six per cent of CSIR royalties and eight per cent of milestone payments. After these agreements in 2003, several other BSAs have been negotiated, amongst others between the San and various growing companies of the Hoodia Gordonii in South Africa, Namibia and Botswana. The amounts of money that is/will be involved is estimated to count up to several million Rand per year.

What is the impact of all this on the San?

From a positive perspective, the agreements have ‘empowered’ the San communities very much. They became an important party in the various negotiations. The case has also

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them to distance themselves from this research however, or at least to stay silent on the matter: “I don’t know nothing of the impact in the region, I am just a researcher” (Fort Hare University, August 2008).

led to increased awareness of indigenous people's rights at the South African government level, as well as internationally. Moreover, the BSA committed the parties to conserving biodiversity and undertaking best-practise procedures for plant collection, necessary because the natural population became endangered. And lastly, the San receive money.

On the other hand, agreement with the MoU for the San constituted a critical moral dilemma. Sharing of knowledge is a culture-defining attribute of communities such as the San and basic to their way of life. 'Owning' the knowledge of plants, is repugnant. Yet, ultimately, the principle of 'no patents' was considered 'too expensive' (Chennells, 2003). Another challenge with the Agreements is the management of the enormous amounts of money involved. Consequently, individuals in the San organisations need to meet very high expectations. Furthermore, negative social and economic impacts, as well as intra community conflicts may arise. For instance, conflict has emerged between self-designated 'traditionalists' and 'Western bushmen' when San land claims were lodged in the Northern Cape province of South Africa.

Is this then the development we look for? The pessimists amongst us, will see the still very unequal position of the San and other 'local communities' in these negotiations around IK and IPR. One could argue for instance, that the San receive only 'the crumbs of the loaf' (Egziabher in 19-05-2008, <http://filer.case.edu.ij3/authorship/hoodia.html>) or that they had to negate their cultural values of 'not owning' knowledge or 'life' because of the 'expensive' alternative of remaining in poverty. Optimists will look at the awareness that has been raised and the empowerment of the San that has taken place. Additionally, the amounts of money are relatively large despite the percentages being small.

For the pessimist, can an environment that is more sensitive to these issues exist, despite or perhaps even because of IPR frameworks? For the optimist, is this the way power relations will remain then, or is there room for more 'equality'? Let us shortly look at the 'conducive environment' to understand this better.

#### *4.2 Conducive Environment*

##### *'Interaction is Key'*

To understand what a 'conducive environment' might entail, use has been made of the concept 'systems of innovation.' To shortly recall, the concept 'understands innovation as a process, in which many stakeholders are included, where different sources of knowledge are important and where policy and institutional settings have an impact on innovation processes. In this thesis, IK is perceived to be one of the 'sources of knowledge' that play a role in this system. IPR should be seen as one of the settings that has an impact on IK and the innovation processes in general. In the theory, some success factors have been noted that are particularly relevant for the IK/IPR debate, namely; integration of different sources of knowledge; horizontal relationships between stakeholders, and trust and other forms of 'social capital.'

From the discussion on the positions of the South African stakeholders, some reflections on these points can be made. First, all stakeholders seem to view the need and the opportunities of recognising IK as an important ‘other’ source of knowledge and findings ways for interaction between indigenous knowledge (systems) and scientific knowledge. ‘Interaction’ is interpreted in different ways however. It either contains the meaning of interaction from ‘equal’ positions – this is what the traditional healers want for instance – or interaction is perceived as ‘extracting useful elements of IK’ and using these for the development of new products.

This leads to the second point, namely ‘horizontal relationships’ between the different stakeholders. Throughout the last centuries, IK and IK holders occupied a very low position in South African society. The legacy of inequality has an ideological as well as a very tangible component in the debate. Concretely, local communities often do not have the necessary capacity to participate in the debate as equal ‘partners,’ simply because they do not have the necessary knowledge, skills, or are not well organised. Internal disagreement between the ‘enormous’ variety of people(s) included in this ‘category,’ makes this even more difficult. The ideological component is especially clearly illustrated in the vocabulary used by the various stakeholders: reference to colonialism and Apartheid is often made.

Trust, consequently, is in general rather limited. The Fort Hare researcher’s choice to play ignorant on issues around the impact on communities for the commercialisation of *Pelargonium*, is directly related to this issue. The many open ends in policy and legislation today, together with the above raised issues, makes ‘trust’ more difficult and engenders an hostile atmosphere in which interaction between stakeholders is very difficult.

What can the role be of IPR in this scenario? From a positive perspective, IPR policy and legislation, and the consequent debate on IK/IPR, has forced different stakeholders to sit together and talk. As one of the informants explained to me: “Respect has already really changed” (Hoppers, August 2008). Secondly, by interrupting the for a long time unquestioned cycle of exploitation of IK and IPR protection by companies and research institutes, traditional healers and local communities are in a more powerful position than before.

From the other side, as was also noted in chapter 2, inequality remains a problem that does not solve itself. Knowledge and learning gaps, as well as lack of social capital, tend to be self-reinforcing. Up until now, IPR seems to have fostered this process, and played a role in widening the gap between poor and rich countries and people. This means that IPR policy and legislation needs to be very sensitive to power relations. Additionally, other institutional settings need perhaps to complement the IPR system specifically to deal with this ‘development objective’ more effectively.

### *Concluding Remarks and Recommendations*

As a conclusion, the IPR system carries the danger of widening gaps between the different stakeholder groups. It does not yet contain the vocabulary to deal with IK, especially the

undocumented IK. This contributes also to the limited view of IK only as a 'resource to be extracted.' Yet, at the same time, it is a powerful framework, both internationally and nationally. Perhaps more powerful than most attempts until now for recognitions of IK and IK holders. What should be done therefore, in my opinion, is to frame the IPR system in such a way that the instruments, the modes, stimulate inclusion of and interaction with IK holders. Furthermore, it is important to prevent the 'stealing' of knowledge. At the same time, investments need to be made in building trust to prevent an increasing reluctance of sharing knowledge because of the fear of being robbed. Interaction and trust between the different stakeholders, consequently, are principal concerns

Some of the general recommendations that follow from this study therefore, are:

- 1) Investment needs to increase in capacity building (knowledge on IPR, skills, organisation) of especially local communities, as a prerequisite for 'equal' interaction;
- 2) Specific attention needs to be given to power inequalities in designing, reframing and implementing IPR systems (acknowledge power relations in formulation policy and legislation);
- 3) Specific attention needs to be given to building trust between the different stakeholder groups, as well as within stakeholder groups (especially communities who are often fragmented);
- 4) IPR framework 'vocabulary' needs to become sensitive to IK as a process, not necessarily 'novel' and often not 'documented';
- 5) It is necessary to place IK/IPR discussions in a time frame: create the space for IK to develop itself (after years of repression) while preventing as much as possible 'piracy' of IK. This will, in time, lead to more 'equal' interaction processes.
- 6) It is necessary to acknowledge that IPR is only one of the institutional settings: To stimulate the development, sharing, and use of IK for development, IPR frameworks can serve as an entry point into the issues at stake, but will only be able to play a limited role within the 'innovation system.'

#### *Follow-up*

For a follow-up, and for defining more concrete actions that follow from these general recommendations, a workshop will be planned with stakeholders in the Netherlands, specifically for DGIS staff. This will help DCO/OC with her activities on IK and IPR in developing countries, as well as in her dialogue in international and national forums on IK and IPR, such as WIPO. This thesis hence, is just a little piece of an ongoing process towards more inclusive and conducive environments for knowledge for development.



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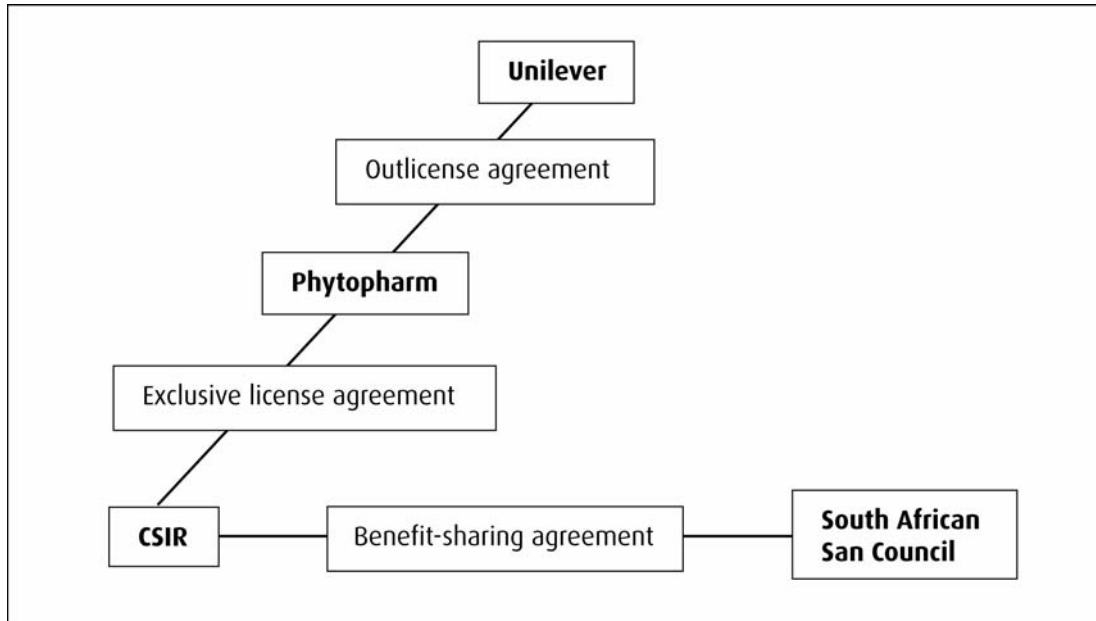
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Figure 1. Village in the Eastern Cape, around Alice, South Africa, July 2008

**Annex I**

**Schematic Overview of License Agreements Commercialisation Hoodia Gordonii**



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