
Access and benefit-sharing mechanisms for the use of botanical resources in Namibia

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Acronyms

CBD	Convention of Biological Diversity
CITIES	Convention on International Trade in Endangered Species
CIRs	community intellectual rights
CoP	Conference of Parties
CRIAA SA-DC	Centre for Research, Information and Action in Africa: Southern Africa Development and Consulting
DEA	Directorate of Environmental Affairs
DCWG	Devil's Claw Working Group
IPR	intellectual property rights
LAC	Legal Assistance Centre
MET	Ministry of Environment and Tourism
NCA	National Competent Authority
NBRI	National Botanical Research Institute
NNBP	Namibian National Biodiversity Programm
OAU	Organisation of African Unity (now the African Union)
PIC	prior informed consent
R&D	research and development
SHDC	Sustainably Harvested Devil's Claw
TK	traditional knowledge
TRIPS	Trade-related Intellectual Property Systems
WGs	Working Groups
WIMSA	Working Group of Indigenous Minorities in Southern Africa
WIPO	World Intellectual Property Organisation

EXECUTIVE SUMMARY

For over a century, the unique biological resource base – wild and cultivated species and varieties – of what is now Namibia has been exploited in unsustainable ways through illegal or clandestine bioprospecting and trading activities, and as a result of poverty and inequality. A great deal of genetic material is believed to have left the country and its waters in the process, although relatively little is known about the genetic resources which have been lost or those that are still here. These problems and threats highlight a need for policies, legislation and action on the ground to regulate access to genetic resources, to protect traditional knowledge and practices, and to facilitate the equitable sharing of benefits from the use of genetic resources. Such policies and legislation, which are currently being introduced in Namibia, are necessary for Namibia and its local communities to reap greater benefits from their biological resources and associated traditional knowledge, innovations, practices and technologies.

*Commercial use and trade of wildlife (plants and animals) is in its infancy in Namibia. Nevertheless, some cases of bio-trade and bioprospecting are already raising issues of biodiversity conservation, protection of traditional knowledge, and benefit-sharing. The species in question include: Devil's Claw (*Harpagophytum procumbens*), Marula fruit (*Sclerocarya birrea*), succulent plants, watermelon (*Citrillus lanatus*), !Nara fruit (*Acanthosicyos horridus*), Monkey oranges (*Strychnos* spp.), and Manketti nut (*Schinziophyton rautanenii*).*

Access to genetic resources and associated traditional knowledge, innovations and practices, and the sharing of benefits from the use of these resources, rests on concepts (such as 'traditional knowledge', 'customary rights and responsibilities', and '(local) community') which are complex, multifaceted, dynamic, subject to changing realities and interpretations, and thus hard to define unequivocally. Conventional intellectual property rights (IPR) systems are generally inappropriate for the protection of traditional knowledge, since they do not recognise the customary systems governing traditional resource access/use and associated knowledge, innovations and practices (collective and often orally transmitted rather than documented).

This insight has motivated efforts, in Namibia and elsewhere in the region, to develop sui generis legislation to regulate access to genetic resources and associated traditional knowledge. Namibia's existing draft sui generis legislation, which is based on OAU (Organisation of African Unity, now the African Union) legislation, recognises the limitations of current forms of IPR protection (such as patents and plant-breeder rights). As such it proposes the creation of a sui generis system to protect the knowledge, innovations and practices associated with genetic resources, based on traditional resource rights and community intellectual rights. This system also serves as a mechanism to ensure national-level compatibility between the Convention of Biological Diversity (CBD) and Trade-related Intellectual Property Systems (TRIPS) – international agreements that Namibia has ratified.

Namibia's draft sui generis legislation is designed to put controls on access to customary practices and related knowledge, but not on the traditional customs and practices themselves. Indeed, the idea is to ensure the continued customary use of genetic resources and related knowledge. There is need to build awareness about the continued importance of traditional knowledge and create incentives to enhance the role of traditional knowledge systems. Namibia's Constitution and 10-Year Strategic Plan for Sustainable Development through Biodiversity Conservation 2001-2010 both contain provisions to ensure benefits from natural-resource use and bio-trade for Namibia and

all Namibians. Secure land-tenure rights – e.g. Namibia’s communal-land legislation – are critical to regulate resource access and ensure an equitable distribution of benefits.

Regulation of access to genetic resources for the purpose of collection and research must strike an appropriate balance between controlling access – to ensure fair benefit-sharing and prevent bio-theft - and not stifling legitimate research activities that are of benefit to Namibia and local communities. Namibia’s draft sui generis legislation aims to achieve such a balance. Another critical research-related issue is to encourage and develop mechanisms for research – and in the future, process research and product development – on biological resources and related traditional knowledge in Namibia, so as to maximise local value added and build national R&D capacity.

Sui generis legislation is easier to develop than implement. In Namibia, as elsewhere in the region, institutional capacity constraints will limit the effectiveness with which such legislation can be implemented. This highlights the need for institutional capacity-building. There is also a need for harmonising national legislation in the region, since biological resources and associated knowledge are often shared between countries, such as in the cases of Devil’s Claw and Marula.

Ethical concerns both motivate and permeate Namibia’s draft sui generis legislation – namely, to see local peoples enjoy secure rights to their knowledge (i.e. effective protection against misappropriation of their knowledge by commercial interests); to see the benefits from the use of biological resources being distributed equitably among local communities (the custodians of local resources) and those wishing to gain access to the local resources; and generally to see a level playing field established in negotiations between local communities and outside parties.

Local peoples’ rights to the protection of and benefits from their resources and knowledge can also be seen as a basic human right. Various global human rights charters – the 1948 Universal Declaration of Human Rights, the 1966 International Covenant on Economic, Social and Cultural Rights, and the more recent Draft Declaration on Indigenous Rights – contain provisions to that effect. Namibia’s well-known conservancy legislation is a practical example of a legal mechanism for achieving greater social justice between communal and commercial farmers, by levelling the playing field between these groups in terms of access to and distribution of benefits from wildlife resources.

1. INTRODUCTION

This Research Discussion Paper (RDP) is a slightly adapted version of a report entitled *Namibia's thematic report on benefit-sharing mechanisms for the use of biological resources*, dated 15 May 2001, which was prepared by the author, in collaboration with CRIAA SA-DC, for the Co-ordinating Office of the Namibian National Biodiversity Programme (NNBP). Housed in the Directorate of Environmental Affairs (DEA) of the Ministry of Environment and Tourism (MET), the NNBP is Namibia's institutional mechanism – and the Co-ordinating Office the focal point – for promoting and co-ordinating policies, programmes and actions relating to the national implementation of the global Convention on Biological Diversity (CBD), to which Namibia is a party. The original report was submitted to the CBD Secretariat by the Co-ordinating Office of the NNBP, in order to fulfil national reporting requirements under the CBD.

As in the original report, the main body of this paper consists of a thematic discussion on generic questions relating to aspects of benefit-sharing associated with the use of biological resources. The appendix contains a case study on benefit-sharing arrangements associated with long-standing international bio-trade in Devil's Claw (*Harpagophytum procumbens*) sourced in Namibia. This was prompted by growing international demand for the plant as a source of active medicinal ingredients for the production of various phyto-medical drugs.

The paper, as in the original report, is structured to address a specific set of generic questions under particular section headings, as suggested by the CBD Secretariat in their guidelines for reports on benefit-sharing. This paper adds an abstract and a conclusion to summarise the main issues and highlight the major findings of the original report.

The original report was put together by a team of Namibia-based consultants (the authors of this paper), under contract with NNBP. The consultants reviewed available documents and literature on issues relating to access to genetic resources, traditional knowledge about plant and animal biodiversity, and the sharing of benefits from the use of genetic resources and biodiversity in Namibia. The principal references are listed at the end of the paper and other references are included in the text and as footnotes.

The consultants also met with a range of stakeholders from governmental and non-governmental institutions, as well as with the co-ordinating office of the NNBP. The purpose of these meetings was to gather further information; examine various perceptions and perspectives; and canvass different views and opinions on related issues, experience, mechanisms, options and choices concerning genetic resource use and access, associated knowledge, innovations and practices, and benefit-sharing among users and providers.

NNBP's institutional structure comprises about a dozen Working Groups (WGs) focusing on specific themes. These WGs were formed to facilitate input into the NNBP process by relevant stakeholder groups. Two of the WGs are of special significance to the original report and this paper: the Biotrade Focal Group and the Traditional Knowledge Focal Group. The paper draws heavily on discussions with members of these two WGs, including the following institutions: Ministry of Environment and Tourism (MET), National Botanical Research Institute (NBRI), Working Group of Indigenous Minorities in Southern Africa (WIMSA), and the Legal Assistance Centre (LAC).

2. BACKGROUND AND CONTEXT

2.1 *Namibia's genetic resource base*

Namibia has a unique climate and ecological profile, and hence biodiversity – wild and cultivated species and varieties. The country's relative isolation¹ has contributed to the maintenance of a unique genetic resource base. There are many naturally occurring plants and animals which have been used since time immemorial by local people as a source of food security, primary health and livelihoods and which could be exploited for commercial purposes (see e.g. CRIAA SA-DC's study on natural products in the Kavango Region). Some of this wildlife is unique and/ or endangered.

Some commercial natural-product use is already significant and expanding (notably wildlife-based tourism in national parks/reserves, on farms and in communal-area conservancies, Devil's Claw bio-trade etc.), but by and large the commercial utilisation of wildlife (fauna and flora) is in its infancy and the importance of marketing efforts is only now being recognised.

Namibia's crop sector is not very extensive (only about 7% of the land area is arable using rain-fed methods). Due to the lack of development in the crop sector (relative to other countries in the region), there are many landraces (mainly pearl millet and sorghum varieties in the north where rainfall is sufficient) still in existence and in use by traditional farmers.

2.2 *The problem of loss of biodiversity and foregone benefits: some underlying reasons*

The territory and waters of what is now Namibia have been exploited for over a century by colonial rulers and apartheid-type development policies based – in the process a lot of genetic material has left the country. Illegal (and potentially harmful) activities and clandestine activity in trading and bioprospecting continue to undermine the health and diversity of biodiversity and ecosystems. Such activities include: poaching of black and white rhino to supply Asian traditional markets; local and regional trade in protected plant and animal species for medicinal purposes; and increasing sale and use in Namibia of so-called traditional Chinese medicines (TCMs)².

There is growing international interest in bio-trade with and bioprospecting in Namibia; some outside groups are willing to negotiate in good faith and in a transparent manner, while others are trying to take advantage of a real/perceived lack of mechanisms, experience, capacity and resolve on the part of Namibia to control biodiversity utilisation in order to reap extensive profits thereof without equitably sharing the benefits (e.g. request from a US institution to survey Namibia's entire flora for US\$5,000).

Poverty and inequality have been and continue to be a grave threat to the maintenance of biodiversity, significantly contributing to genetic erosion. Continued socio-cultural fragmentation, economic dualism and political stratification after independence make it difficult to reach societal consensus and achieve concerted action towards addressing the issues of biodiversity conservation and sustainable use.

¹Prior to Independence, Namibia was called South West Africa and for all practical purposes constituted an integral part of South Africa. The territory of what is now Namibia thus shared South Africa's political and economic isolation during the apartheid years (roughly the period 1950–1990).

² These kinds of illegal and/or clandestine trading activities are addressed in the *Policy on the Use of Wildlife for Medicinal Purposes*, MET, final draft, 21 June 1999.

Also, Namibia lacks a culture of information sharing and institutional collaboration. This is changing, however, as demonstrated by the establishment of inter-institutional mechanisms and efforts to co-ordinate biodiversity-related research, policy and action. Examples are the Working Groups established under Namibia's National Biodiversity Programme, and recent Task Force Teams, with the aim of addressing critical issues relating to Devil's Claw and indigenous fruits, respectively.

Little is known about the genetic resources that have left Namibia and those that are still here, or their biological and conservation status – consequently there is a need to compile careful inventories.

All these problems and threats underscore the need for policies and legislation to regulate access to genetic resources, to protect traditional knowledge and practices, and to facilitate the equitable sharing of benefits from the use of genetic resources. Such policies and legislation, which are currently being introduced in Namibia, are necessary to enable Namibia and local communities to reap greater benefits from their biological resources and associated traditional knowledge, innovations, practices and technologies.

2.3 Some examples of bio-trade and bioprospecting in plants and animals from Namibia

While commercial use and trade of wildlife (plants and animals) is in its infancy in Namibia, a wide range of natural (and cultivated) flora and fauna exists which could be used commercially³. Some cases of bio-trade and bioprospecting in Namibia already exist, raising questions about biodiversity conservation, protection of traditional knowledge, and benefit-sharing. These cases include:

- **Devil's Claw (*Harpagophytum procumbens*)**

This plant has long been used for its medicinal properties under traditional systems of customary resource use in the Kalahari Sands of Namibia, Botswana and South Africa. International bio-trade from Namibia (and its neighbours) has grown substantially over the past four decades. The rights to traditional knowledge about the medicinal properties and applications of Devil's Claw – held mainly by the San in the eastern parts of Namibia – have already been lost, as some patents on extraction and processing methods have been granted to commercial companies in Germany and the UK. But access to the biological resource continues to raise issues of sustainable resource management and sharing of benefits from international trade (see Appendix 1 for detailed case study).

- **Marula fruit (*Sclerocarya birrea*)**

This fruit has been traditionally used as a food supplement by the San and Ovambo peoples. Some germ plasm has left Namibia for South Africa and Israel. South Africa has made improvements on Marula fruit trees with a view to commercial juice and liqueur production and has offered Namibia free access to the improved varieties. Meanwhile Namibia is focusing its efforts on the commercialisation of Marula oil, building on traditional knowledge and practices

³ See, for instance:

- Lists of relevant plant species being developed by the National Botanical Research Institute (NBRI); as presented in Patricia Craven and Sian Sullivan, *Inventory and review of ethno-botanical research in Namibia: first steps towards a central 'register' of published indigenous plant knowledge*; and
- CRIAA SA-DC's survey of natural fruits (and related trees) in the Kavango Region with potential for commercialisation: CRIAA SA-DC (August 1999), *Non-Timber Forest Products Project, Phase 1 (NTFP-1), May 1998-July 1999, Kavango Region, Namibia*, Final Report for CARE Oesterreich.

of oil extraction. Current issues revolve around the development of commercially viable Marula-oil extraction and processing techniques; product development to produce a commercially attractive oil product; marketing; and arrangements for the equitable sharing of benefits from the sale of processed Marula oil.

- **Succulents**

Succulent plants, found mainly in the south-western desert areas of Namibia (formerly the 'Sperrgebiet' for diamond production), have long been sought after for research and taken out of Namibia by collectors for their novelty value⁴. Namibia could make significant amounts of money if the succulents were properly cultivated in nurseries in the south-west for commercial sale and trade.

- **Watermelon (*Citrillus lanatus*)**

Namibia and Botswana are the joint centre of origin for genetic diversity of watermelon. Different mixed wild and domesticated varieties are grown in the north of Namibia. There are at least four traditional uses of watermelon, with all ethnic groups in Namibia being the custodians of the traditional knowledge about cultivation and use. A local company in Oshakati is buying seeds from local women (who are in the business of extracting the seeds) for onward sale to cosmetics companies. A request has been received from a US company and the US Department of Agriculture to screen Namibian species of watermelon for natural resistance to fungi attacking cultivated species of commercial interest to the US.

- **!Nara fruit (*Acanthosicyos horridus*)**

This fruit is a water-melon variety that grows in the Namib Desert. The desert-dwelling Topnaar people, the traditional custodians of the fruit and related traditional knowledge, have been directly benefiting from commercial !Nara exports to a Cape Town-based commercial company, via exporters in Walvis Bay. This trade is currently in limbo, and monetary benefits to the Topnaar are under threat from new middlemen, due to the collapse of the Cape Town-based company⁵.

- **Monkey oranges (*Strychnos* spp)**

These local fruits are currently being exported by a local Namibia-based private company to the University of Stellenbosch, who are conducting an internationally funded project aimed at liqueur production. In this case, the issue is one of how to 'encourage' the local company to collaborate with the recently established Namibian Indigenous Fruit Task Team on to organise benefit-sharing issues associated with the export deal.

- **Manketti nut (*Schinziophyton rautanenii*)**

For centuries, the San people have collected Manketti nut and extracted its oil for traditional use. For much of this activity in the Kavango Region in Namibia's north, the San have been used as cheap labour by the Kavango people. Commercialisation of oil extraction, processing and sale could fetch substantial benefits to the local communities, but would raise difficult questions about an equitable formula for partitioning of the benefits among different local peoples (e.g. San and Kavango).

⁴ It is not uncommon for Namibian succulent plants to pop up in northern catalogues.

⁵ Joe Henschel, draft report in preparation, Desert Research Foundation of Namibia (DRFN).

3. NAMIBIA'S VIEWS ON ISSUES CONCERNING INTELLECTUAL PROPERTY AND TRADITIONAL KNOWLEDGE RELATED TO GENETIC RESOURCES

3.1 *How to define relevant terms, including subject matter of traditional knowledge and scope of existing rights*

3.1.1 'Traditional knowledge'

NNBP's Sector Paper on Traditional Knowledge⁶ defines traditional knowledge as "a body of knowledge built by a group of people through generations living in close contact with nature, including a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use". The same source suggests a definition of traditional knowledge (TK) in terms of biodiversity as the "knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity". This definition is consistent with the text of the CBD (viz. Preamble and Article 8 (j)).

Other terms, including 'indigenous knowledge' and 'local knowledge', have been used to refer to systems of knowledge (and innovations and practices) developed and used by communities having evolved their own particular traditional lifestyles. Moreover, distinctions have been made between 'indigenous' and 'local' in relation to both 'knowledge' and 'communities'. However, in Namibia, as elsewhere in Africa, it is often difficult, if not impossible, to distinguish between 'indigenous', 'traditional', and 'local'.

Throughout southern Africa, for instance, hunter-gatherer groups known collectively as the San already lived in the region when the Bantus arrived from the north. Centuries later, both the hunter-gatherer groups and the more sedentary Bantu groups were already established in the region when the white settlers arrived. All three groups evolved systems of knowledge that reflected their traditional lifestyles (as well as mixed knowledge systems as a result of inter-marriage over time), notwithstanding who arrived earlier or later. All three groups (as well as any other groups) should or could be included, at least in principle, as candidates for having 'traditional knowledge' and being 'indigenous and local communities'. In practice, whether any particular local groups actually possesses traditional knowledge will have to be judged empirically on the basis of how these groups understand, categorise and monitor their environment, organise themselves, and use their local natural-resource base etc.

It is important to remember that throughout Namibia, as elsewhere in Africa, many different traditional customs and knowledge systems are still in place. At the same time, it must be recognised that much TK has been, and is probably being lost, as a result of trade in natural-resource products; out-migration of individuals and groups from local areas (e.g. rural-urban migration); displacement and loss of life through armed conflict (e.g. war of independence); loss of life due to disease (viz. HIV/AIDS); and more generally as forces of modernisation, commercialisation and globalisation penetrate deeper into previously isolated local areas. The fact that TK is largely undocumented in Namibia (and elsewhere in Africa) has contributed to the erosion of TK systems.

There has been a tendency in Namibia, as elsewhere in newly independent African countries, to belittle and dismiss TK as unscientific and hence worthless. This tendency has perhaps been even

⁶ *Traditional Knowledge Sector Paper* (1999), Namibia National Biodiversity Programme (NNBP), op. cit.

stronger in Namibia than elsewhere, given its history of racially-based colonial policies which institutionalised discrimination against all facets of traditional black African societies and communities, including local knowledge systems.

However, it is now becoming increasingly clear that traditional knowledge, innovations and practices have been central to local sustainable, environmental management and biodiversity conservation. This does not mean, however, that all traditional knowledge and practices are necessarily conducive to or consistent with sound and sustainable resource management. For instance, customary use of the following traditional medicinal plants has raised concerns in Namibia⁷:

- *Protea gagedi* from north-eastern Namibia came close to extinction as a result of unsustainable use by traditional healers.
- The so-called resurrection plant (*Myrothamnus flabellifolius*) from the Namib Desert escarpment zone is reportedly under threat.

Moreover, traditional knowledge itself is dynamic and subject to adaptation and change. In drawing on and trying to integrate TK with scientific knowledge, care must be taken – on the basis of empirical investigation into what works and what does not – to build on the strengths of TK while being aware of its limitations.

3.1.2 Customary rights and responsibilities

Traditional knowledge goes hand in hand with traditional (‘customary’) rules and regulations governing intra-household and intra-community socio-cultural relationships as well as patterns of human resource access and use, including that of genetic resources. Throughout history, indigenous and local people and communities living traditional lifestyles have tended to abide by area-specific (or group-specific) bodies of customary law, enforced by local traditional authority structures and systems represented by functionaries such as chiefs, spirit-mediums, traditional healers, etc. The role and evolution of customary law in Namibia has been reviewed in a recent book published by the Centre of Applied Social Sciences of the University of Namibia.⁸

Much as traditional knowledge systems have been breaking down or disappearing in many local (rural) areas of late, so have systems of customary law been eroded in recent times. Throughout Africa, colonial policies and practices undermined customary systems of law and authority by installing new power structures and curtailing local traditional autonomy. In Namibia, apartheid-type approaches of racially-based ‘separate development’ magnified the destabilising effects of colonial policies on traditional power structures and on customary authority systems regulating resource access and use.

The transition to independence has not necessarily halted or reversed the trend of weakening traditional authority structures and customary law enforcement in Namibia. New local government structures – and new statutory laws passed – have rarely taken into account, let alone reinforced, traditional structures.

All over Namibia, customary rules and traditional lifestyles are being eroded by the forces of modernisation and commercialisation. It is therefore necessary to clarify what the term ‘customary’ means and what is the scope for existing traditional rights. Care must also be taken that the

⁷ Policy on the use of wildlife for medicinal purposes – a role for the Ministry of Environment and Tourism (MET), final draft 21 June 1999.

⁸FM d-Engelbronner-Kolff, M Hinz, and EL Sindano (1995), “Traditional authority and democracy in Southern Africa”, Centre of Applied Social Sciences, University of Namibia (UNAM).

exclusion of customary use of and traditional access to genetic resources does not create loopholes for unwarranted or harmful access by outsiders to biological resources and associated traditional knowledge.

On the other hand, it is increasingly recognised that in order to enhance local rural food security, primary health and livelihoods, and prevent further loss of biodiversity, it is necessary to maintain or revive those elements of customary law which tend to strengthen local systems of environmental management and biodiversity conservation through sustainable use of genetic resources. This is explicitly recognised by the draft policy/legislation on access to genetic resources being developed in Namibia, and also by the conservancy legislation already in place.

There is a need for better integration of customary law and modern policy/legislation, as well as modern and traditional law enforcement/authority systems so that they reinforce, rather than undermine, each other. Botswana provides an example of what may be possible in Namibia. Botswana's statutory law, for instance, makes provisions that in certain circumstances those who infringe upon customary law can be charged under such law.

3.1.3 'Community'

Finally, the term 'community' must be considered and put into perspective. Namibia's Access to Biological Resources and Associated Traditional Knowledge draft legislation defines 'local community' as a "human population in a distinct geographical area, with ownership or stewardship over its biological resources, innovations, practices, knowledge, and technologies governed partially or completely by its own customs, traditions or laws". This definition is meant to ensure, *inter alia*, that outsiders (people not living in that distinct geographical area) are not included in 'local community'.

However, close kinship relations may – and often do – straddle different distinct rural and urban geographical areas, e.g. where some members of an extended family have moved from a rural area to a town to tap into new resources and seize on new opportunities for employment, sharing some of the benefits with the extended family (viz. remittances to rural family members).

Furthermore, it is often observed that in practice relations between different ethnic groups sharing a local area, or between different local households within a local ethnically homogenous community, are exploitative rather than collaborative (viz. the San being used as cheap labour by other ethnic groups like the Herero or the Kavango people). Finally, varying degrees of stratification and fragmentation by age, class, race, gender, political affiliation, and other variables is the rule, and not the exception, in the great majority of local 'communities' in Namibia (as elsewhere in the region).

These realities on the ground raise difficult questions regarding the practical meaning and delimitation of 'local family' and 'local community', and the effective and equitable application and implementation of access and benefit-sharing legislation. Careful case-by-case analysis is required to examine the socio-cultural relations and realities on the ground and determine the best course of action.

3.2 *Whether existing intellectual property rights regimes can be used to protect traditional knowledge*

3.2.1 **Conventional IPR systems**

Generally, existing intellectual property rights (IPR) regimes – notably patent systems – are inappropriate for the protection of traditional knowledge for the following reasons, among others:

- They were originally designed and developed for industrial inventions, whereby innovations are viewed as an individual activity composed of separate identifiable components and ideas, each of which can be described and owned, and thus patented. In contrast, most traditional innovation at the local and community level is a result of a collective process of freely sharing new ideas, knowledge and practices that cannot be owned by an individual or even a group. This applies, in particular, to local-level management and use of biodiversity.
- The financial and legal resources required to apply for, maintain, and if necessary defend, any patent are generally far beyond the capacity and means of resource-poor local communities.
- Commercial companies can patent products and/or processes derived from traditional knowledge by making small ‘improvements’ (such as isolating an active component and patenting the extraction process) without any of the benefits accruing to the custodians of the traditional knowledge.
- Holders of traditional knowledge are groups that are often not homogenous and may live in transboundary areas, thus making it difficult to be represented under a single title or rubric.
- Local communities usually find it difficult to handle sensitive commercial information in a confidential but transparent manner.

It has been argued that some limited protection of traditional knowledge would be possible using regimes of copyright, trade secrets and geographical indications (certificates of origin).⁹ These and other innovative mechanisms are being examined in an effort by the World Intellectual Property Organisation (WIPO) to identify and explore the intellectual property needs and expectations of ‘new beneficiaries’ (Programme to Develop Intellectual Property Rights for New Beneficiaries, launched in 1998).

However, on the whole, conventional intellectual property law does not cover inventions and innovations of indigenous and local peoples. Their contributions to plant breeding, genetic enhancement, biodiversity conservation and global drug development are not recognised, compensated or even protected. Similarly, the traditional knowledge of indigenous and local peoples is not treated as intellectual property worth protecting, while the knowledge of modern scientists and companies is granted protection. The patentability of products and/or processes derived from traditional knowledge raises critical questions about compensation for the knowledge and the protection against future uncompensated use of the knowledge.

⁹ Mugabe, John. 1999. Intellectual Property Protection and Traditional Knowledge: An Exploration on International Policy Discourse. *Biopolicy International* No.21, p.13, footnote 33.

3.2.2 Namibia's efforts to develop *sui generis* legislation to regulate access to genetic resources and associated traditional knowledge

Over the past two years, Namibia has developed a draft policy on the regulation of access to genetic resources and the protection of associated traditional knowledge, in a participatory fashion with the active involvement of relevant stakeholder groups. The draft policy explicitly recognises that “current forms of intellectual property protection, such as patents and plant breeders’ rights, cannot be applied for either technical reasons or because they are contrary to the practices and beliefs of some communities”. The draft policy therefore proposes the creation of a “*sui generis* system on the basis of traditional resource rights and community intellectual rights to protect the knowledge, innovations and practices associated with genetic resources separate from existing intellectual property rights systems”.

These provisions are anchored in the Namibian draft legislation on Access to Genetic Resources that has been developed hand in hand with the draft policy. Part III defines and enshrines ‘Community Rights’ (Articles 17-24), including ‘Recognition of Community Intellectual Rights’ (Article 24) concerning traditional knowledge, innovations and practices associated with genetic resources and biodiversity in the wild. Part IV specifies ‘Farmers’ Rights’ (Articles 25-27) to protect traditional knowledge, innovations and practices regarding cultivated varieties and agrobiodiversity.

3.2.3 Links to trade-related intellectual property systems (TRIPS)

Namibia is also a party to the international TRIPS agreement and has responsibility for abiding by its provisions and implementing requisite national policies. While TRIPS generally does not protect traditional knowledge (except perhaps potentially in a limited sense through mechanisms like trade secrets and indications of origin), its Article 27 (3)(b) allows members to “exclude from patentability plants and animals other than micro-organisms, and essentially biological processes for the production of plants and animals other than non-biological and microbiological processes”. However, at the same time Article 27 (3)(b) requires members to provide for protection of plant varieties either by patents or by an effective *sui generis* system.

Even though the attribute ‘effective’ is controversial (remains subject to interpretation), this provision opens the door for establishing an alternative intellectual property rights regime covering traditional knowledge (farmers’ rights) under TRIPS, and at the same time ensuring implementation of Article 8(j) of the CBD relating to indigenous and local communities. Namibia’s Access to Genetic Resources draft legislation constitutes the *sui generis* system that ensures compatibility between TRIPS and CBD at national level.

3.3 Options for the development of sui generis protection of traditional knowledge rights

3.3.1 Salient features of Namibia's draft policy and legislation on regulating access to genetic resources and traditional knowledge

Sui generis protection of traditional rights is an essential and integral part of Namibia’s draft policy and legislation on Access to Genetic Resources. The draft policy/legislation is based on the following principles:

- Namibia has sovereign rights over genetic resources in areas within its jurisdiction;
- ownership of genetic resources is vested in the State;

- the State and its people have the right to regulate access to genetic resources and to associated knowledge, innovations and practices of local and indigenous communities;
- access to genetic resources must be subject to prior informed consent (PIC) and mutually agreed terms;
- the access determination process must be transparent;
- local communities have collective rights over genetic resources, as well as over their associated knowledge;
- access to genetic resources must conform with existing sustainable use legislation and reflect a precautionary approach;
- benefit-sharing shall include financial benefits, technology transfer and capacity-building; and
- cooperation with other states.

The draft policy and legislation have the following objectives:

- conservation of biodiversity and sustainable use of genetic resources;
- establishment of permanent participatory planning process to address access and benefit-sharing;
- protection of the rights of local communities to regulate access to genetic resources and associated knowledge;
- equitable benefit-sharing and distribution of benefits with providers;
- capacity-building;
- economic and social development; and
- international cooperation.

The main provisions of the draft policy and legislation on benefit-sharing and *sui generis* protection of traditional knowledge include:

- contractual arrangements within appropriate legal and institutional framework;
- tripartite contractual arrangements: State, providers and users;
- features of contracts;
- legal fund for community;
- independent monitor to evaluate agreement;
- joint planning for change, income sharing and distribution; and
- establishment of fund, jointly administered by State and community, to ensure equitable sharing of benefits.

These principles, objectives and provisions conform to OAU model legislation, as do the proposed institutional arrangements:

- National Competent Authority (NCA) – with responsibility to:
 - create and operate a regulatory mechanism for the protection of community intellectual rights (CIRs) and farmers’ rights and the regulation of access to biological resources;
 - carry out process of consultation and participation with local communities;
 - identify and define types of, and procedures necessary for the recognition of, CIRs and farmers’ rights;
 - develop system of registration of items protected by CIRs and farmers’ rights according to their customary practices and law;
 - issue licences for the exploitation and commercialisation of biological resources; and

- identify relevant technical institutions to assist local communities in the categorisation and characterisation of their biological resources, knowledge, innovations, practices and technologies.
- National Intersectoral Co-ordination Body (NICB) – representatives from Government, NGOs, scientific and professional organisations – with responsibility to:
 - ensure that minimum conditions for agreements with collectors are complied with;
 - ensure that community rights are protected and verify that PIC is adhered to; and
 - recommend policies and laws on the sustainable use of biological resources including new laws on intellectual property rights, community intellectual rights, and farmers’ rights over their biological resources, innovations, knowledge and technologies.
- Technical Advisory Body (TAB) – with responsibility to:
 - advise on policy options that promote the protection of CIRs, farmers’ rights, and regulation of access to biological resources;
 - prepare lists of taxa of threatened species and habitats;
 - develop mechanisms for dissemination of information concerning threats to biological resources; and
 - monitor and evaluate the implementation of the Access to Genetic Resources Act.
- National Information System (NIS) – designed to:
 - compile information and documentation on CIRs, farmers’ rights, access to biological resources and traditional knowledge, innovations and practices;
 - maintain R&D information system on biological resources and traditional knowledge; and
 - compile information and documentation on cases of biological resources and community knowledge, innovations, practices and technologies.
- Community Gene Fund (CGF) set up as an autonomous trust – to report to NCA and designed to:
 - derive its funds from shares due to local farming communities from use of plant and animal genetic resources;
 - receive royalties from breeders’ rights-protected seeds sold for the benefit of farming communities whose varieties have been the basis for the breeding of the breeders’ varieties; and
 - finance suitable projects developed by and for the benefit of the farming communities.

The draft Access to Biological Resources and Associated Traditional Knowledge legislation includes provisions for farmers’ rights and breeders’ rights, consistent with the OAU model legislation. This inclusion helps to make the Act eligible as effective *sui generis* legislation under Article 27 (3)(b) of TRIPS as well as Article 8(j) of the CBD.

3.4 *The relationship between customary laws governing custodianship, use and transmission of traditional knowledge and the formal intellectual property system*

As pointed out under Section 3.2 above, conventional intellectual property rights (IPR) systems and related formal statutory legal systems normally do not recognise customary systems governing traditional resource access and use and associated knowledge and practices. Namibian IPR and formal legal systems are no exception to this general rule.

As mentioned in Section 3.1, colonial and apartheid policies severely undermined customary systems. Even after independence, the erosion of customary laws as well as traditional authority and cultural systems seems to have continued as a result of further modernisation of governance and commercialisation of economic production and social relations.

Custodianship is a different notion from authorship, a term used in formal IPR systems designed to protect intellectual property. Custodianship is a collective role or responsibility, usually embodied or performed by the traditional authorities. By contrast, authorship is a term denoting an intellectual contribution or role that can easily be attributed to an individual or identifiable individuals.

Furthermore, in Africa (including Namibia), transmission of traditional knowledge (TK) from one generation to another has largely proceeded in an oral fashion, not through documentation. This has contributed to the difficulty of conventional IPR systems being able to capture the essence of TK.

The difficulty in protecting orally transmitted knowledge as intellectual property has motivated calls for establishing community-level registers which would list relevant items of TK for possible use and protection, and also to enhance community awareness of the potential value of that TK. The mechanism of a community register is included in Namibia's draft *sui generis* legislation (Article 29 vi); see also Section 3.5 below.

There are existing efforts at documenting orally transmitted knowledge in Namibia and the southern African region that are valuable primarily in terms of the development (or maintenance) of the identity, dignity and culture of local and indigenous peoples, and not so much in establishing intellectual property that could yield commercial benefits. The regional Working Group on Indigenous Minorities in Southern Africa (WIMSA), for instance, under its regional Education Programme has supported the development of 'knowledge banks' on the oral history and cultural heritage of different San cultures.¹⁰

¹⁰ WIMSA aims to establish some of these San groups' historical cultural achievements; correct the historical record of what happened to these groups; anchor that knowledge in educational materials that teach them about their 'true' culture and history; and thus assist these marginalised groups in building a stronger identity, dignity and culture. There are potential income-generating applications as well. Notably, such historical knowledge may be used by these groups in a) possible land claims (e.g. getting back land which they lost through eviction) and/or b) eco-cultural tourism (providing better information and thus attracting eco-culturally interested tourists).

3.5 Means by which holders of traditional knowledge, including indigenous peoples, may test ways of protecting traditional knowledge based on existing intellectual property rights, sui generis possibilities, and customary laws

It was argued earlier that existing IPR regimes do not recognise traditional knowledge as intellectual property and hence cannot protect community intellectual property rights. Customary laws may still work well locally, but outside their traditional local confines their clout and effectiveness tends to break down. This leaves *sui generis* systems as the principal means of protection of traditional community knowledge.

3.5.1 Relevant provisions in Namibia's *sui generis* draft policy and legislation

The draft Act on Access to Biological Resources and Associated Traditional Knowledge is designed to put in place means for the protection of traditional knowledge. These include:

- requirements of an application for the necessary prior informed consent and written permit by the user and of reaching a tripartite (State, provider, user) benefit-sharing agreement prior to the granting of access to biological resources by the appropriate authorities (Articles 3, 4);
- development of a system of registration of items protected by CIRs and farmers' rights according to their customary practices and law (Article 29 vi);¹¹ such registration may heighten community awareness of the value of community knowledge and empower communities to control access to genetic resources for commercial use; and
- establishment of a Community Gene Fund to finance projects developed by farming communities and aimed at solving their problems (Article 37).

The Act has not yet been passed and therefore no practical experience of its implementation exists to date. Once the Act has been passed and is being implemented, it will be possible to learn what does and does not work on the ground, and to develop and fine tune effective mechanisms for the protection of traditional knowledge.

3.5.2 Capacity constraints

Generally, there is a gulf between policy formation and implementation in Namibia. The capacity on the ground to implement any means and provisions on the protection of traditional knowledge, as any other policies, is likely to be limited. This highlights the need for capacity-building and learning of what does and does not work in circumstances of limited organisational and operational capacity.

3.5.3 Need for harmonisation of national legislation across countries in the region

In cases where local resources or associated knowledge are shared between countries in a region, legislative provisions for regulating access to biological resources and protecting traditional knowledge, as well as benefit-sharing mechanisms and agreements, need to be harmonised between all the countries involved. Harmonisation of controls and monitoring systems is necessary, for instance, for all plant and animal species traded regionally for medicinal purposes.¹²

¹¹ The system of registration may record and register items of traditional knowledge on wild or domesticated plants animals or conservation practices to be protected.

¹² This is an integral part of a new policy on the Use of Wildlife (plants and animals) for Medicinal Purposes developed by MET in Namibia.

The case study on Devil's Claw presented in Appendix 1 affords a specific example of several countries in the southern African region (Namibia, Botswana and South Africa) sharing the same natural resource, Devil's Claw, but not the knowledge about the medicinally active ingredients in it, which has already left Namibia and the region, as indicated by the patenting of some extraction and processing methods in the North¹³. Nevertheless, suitable regulatory control and monitoring of harvesting and exporting Devil's Claw is still necessary to ensure local-level sustainable resource management. In addition, appropriate incentives and assistance to maximise benefit retention at local and national level need to be put or kept in place (local-level organisation, product quality control and related lab-testing capability, value added through domestic processing etc.). Such regulatory policies, incentives and assistance need to be harmonised across the region so that all provider-countries are striving in the same direction, regional trade is facilitated, and benefit retention in the region is maximised.

Another case of some interest here is that of the Marula fruit, which has good potential for regional commercial trade. Germ plasm has already gone to South Africa and Israel, but while South Africa and Israel have focused their attention on Marula juice and liqueur production, Namibia is concentrating its efforts on commercial Marula oil extraction and processing. A commercially viable technique for oil extraction is currently being developed as an essential precondition for effective product development, marketing, trade, and provision of related benefits to Namibia, specifically among provider communities (San and Ovambo ethnic groups).

3.6 How to ensure that granting intellectual property rights does not preclude continued customary use of genetic resources and related knowledge

It was argued earlier that conventional IPR systems do not recognise – and thus cannot protect – traditional knowledge as intellectual property. Unregulated access to this knowledge may lead to loss of biological resources and associated knowledge, but conventional IPR protection of products and processes derived from these resources and the associated knowledge may restrict the custodians of these resources and knowledge from using it freely according to their traditional customs and practices. For instance, farmers may no longer be able to save seeds for their own use. This could result in genetic erosion and environmental degradation.

It is therefore both necessary and highly desirable to regulate access to biological resources and protect traditional knowledge using *sui generis* IPR systems. Furthermore, the *sui generis* systems should not be designed to put controls on customary practices and traditional knowledge, but to put such controls on the access to such practices and knowledge for their better protection.

As mentioned above, Namibia is currently introducing such a *sui generis* system through new policy proposals and legislation. In order to exempt customary use and related knowledge from controls under this envisaged alternative IPR regime, the draft policy on Regulation of Access to Genetic Resources and the Protection of Associated Traditional Knowledge in Namibia specifically proposes to exclude from the scope of the intended legislation traditional access to, use and exchange of genetic resources and the associated traditional knowledge, innovations and practices.

This is also reflected in the draft Access to Biological Resources and Associated Traditional Knowledge Act. Article 2 on the scope of the legislation specifies under Subsection 2 reads:

“This legislation shall not affect the following:

¹³ Used here to refer to all developed and industrialised countries.

- the traditional systems of access, use and exchange of biological resources;
- access, use and exchange of knowledge and technologies by and between local communities; or
- the sharing of benefits based upon the customary practices of the concerned local communities, provided that the provisions of this subsection shall not be taken to apply to any person or persons not living in the traditional and customary way of life relevant to the conservation and sustainable use of biological resources.”

Of course, to what extent such legal provisions ensure that continued customary use is not precluded in practice will only become clear once the new Act is passed and being implemented.

4. NAMIBIA’S VIEW RELATING TO INTELLECTUAL PROPERTY RIGHTS AND ACCESS AND BENEFIT-SHARING AGREEMENTS

4.1 Ways to regulate the use of resources that take into account ethical concerns

4.1.1 Provisions in Namibia’s *sui generis* draft legislation

Namibia’s policy proposals and draft legislation on Access to Biological Resources and Associated Traditional Knowledge are based on a number of principles and objectives (see Subsection 3.3 above), several of which have strong ethical dimensions, notably:

- access to genetic resources must be subject to PIC by the concerned communities and based on mutually agreed terms;
- the access determination process must be transparent;
- equitable benefit-sharing and distribution of benefits with providers; and
- the establishment of a permanent participatory planning process to address access and benefit-sharing.

More generally, the introduction of *sui generis* IPR legislation in itself can be viewed as an attempt to address fundamental ethical concerns arising from:

- the appropriation of knowledge by industrial country firms and scientists without fair compensation or reward to indigenous and local peoples; whereas
- the knowledge of indigenous and local peoples is, or should be, their property and there is no reason why international law should discriminate against them and create barriers to their enjoyment of the rights in that knowledge as their property.

4.1.2 Broader human rights approaches

Furthermore, denying local and indigenous peoples access to benefits from their resources and knowledge could be seen as an infringement on basic human rights.¹⁴ It has been argued that existing global Human Rights Charters – such as the 1948 Universal Declaration of Human Rights and the 1966 International Covenant on Economic, Social and Cultural Rights – contain provisions that could be interpreted to cover rights of indigenous and local peoples, including rights to benefits arising from the use of their resources and knowledge, such as:

¹⁴ Western legal concepts and human rights theorists have asserted, however, that collective rights are not human rights.

- the right of self-determination (including the right to dispose of, protect and conserve natural resources);
- the entitlement to equal protection under the law; and
- the right to freely participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.¹⁵

More recently, a draft Declaration on Indigenous Rights was issued containing provisions on the protection of intellectual property rights in traditional knowledge. Paragraph 12 of the Declaration upholds the right of indigenous peoples to practice and revitalise their cultural traditions and customs, including the right to maintain, protect and develop the past, present and future manifestations of their cultures (historical sites, artifacts, designs, ceremonies, technologies, and performing arts and literature).¹⁶

4.1.3 Ethical concerns in plant breeding using landraces

It is quite common for private and public plant breeders to use landrace varieties from the wild for genetic improvement without necessarily returning some of the benefits from the use and sale of improved varieties to the local communities, who contributed to the development of the landraces through their local traditional systems of seed interchange, agricultural experimentation, and environmental management.

Namibia's new Access to Biological Resources and Associated Traditional Knowledge draft legislation covers traditional farmers' rights as well as plant breeders' rights. Thus it provides a mechanism to turn the one-way flow of benefits derived from landraces into a two-way flow.

4.1.4 Namibia's conservancies

Namibia is well known for its legislation passed in 1996 granting exclusive use rights over animal wildlife to communal-area institutions, called Conservancies. In the absence of a Communal Land Bill, the Conservancy legislation was designed to allow any local community or group within a well-defined local area to apply for and be granted Conservancy status, provided a proper Conservancy Committee had been set up and a proper management plan developed. The management plan outlines means of proper land and resource-use planning (e.g. wildlife take-off quotas). The Committee determines how benefits are shared among conservancy members – both direct monetary benefits accruing from use of natural resources and indirect benefits in terms of local capacity-building and technology transfer. To date, more than 35 applications have been received and more than 15 conservancies have been formally approved and established.

The Conservancy legislation was motivated in part by equity concerns. Commercial farmers were granted exclusive use rights over animal wildlife on private land much earlier, in the 1970s, and this is considered to have contributed greatly to the expansion of wildlife-based tourism, as well as wildlife conservation, on private land. Extending wildlife use rights to people in communal lands was seen as a way of creating equity between commercial and communal farmers, and of giving the latter an equal opportunity to benefit from wildlife.¹⁷

¹⁵ Mugabe, John. 1999. Intellectual Property Protection and Traditional Knowledge. *Biopolicy International*, No.21, pp.16-17.

¹⁶ Ibid, p.19.

¹⁷ For aspects of benefit generation and sharing within conservancies and in community-based natural resource management (CBNRM) more generally, see the following references:

- World Wildlife Fund (WWF), Living in a Finite Environment (LIFE) Programme. Nov.2000. Community-based Natural Resource Management in Namibia – an overview of progress and prospects; and

The current trend of community-based natural resource management (CBNRM) is towards broader-based resource management schemes with management plans and benefit-sharing mechanisms extending to all resources within the conservancy borders, not just animal wildlife. Plants are not specifically included in the Communal-area Conservancy legislation. On the other hand, plants and natural products are covered under a new forestry policy and legislation (still in draft)¹⁸ and under the draft legislation on access to genetic resources and related traditional knowledge.

Recently, some commercial farmers in Namibia have been forming associations of their own – sorts of ‘commercial conservancies’. The rationale is that the viability of livestock farming and wildlife-based tourism on marginally productive commercial land can be enhanced by pooling natural, human and financial resources.

4.2 *Ways to ensure the continued customary use of genetic resources and related knowledge*

4.2.1 **Provisions in Namibia’s Constitution**

According to Article 95 (1) of Namibia’s Constitution, Namibia is obliged “to adopt policies aimed at maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilisation of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future”. This constitutional provision represents a powerful incentive and leverage for keeping in place the processes and requisite mechanisms to achieve the conservation and sustainable use of biological resources, notably the customary systems of resource access and use and the associated traditional knowledge, innovations and practices.

4.2.2 **Namibia’s Strategic Plan for Sustainable Development through Biodiversity Conservation 2000-2010 (NBSAP)**

Namibia is currently formulating a 10-year biodiversity strategy and action plan for sustainable development. Of the strategic aims set forth in the strategy, two relate closely to traditional knowledge and benefit-sharing:

- i) promote and control bioprospecting and bio-trade activities to generate sustainable benefits for Namibia; and
- ii) demonstrate and promote the role of indigenous knowledge systems in biodiversity conservation and sustainable resource management, and establish opportunities for indigenous communities to share this knowledge with other parties.

Strategic aims i) and ii) encompass a number specific objectives, including:

- strengthen current national capacity related to bio-trade issues;
- ensure effective cooperation at relevant levels and between institutions;
- strengthen indigenous resource management systems;
- address tenure issues for land and other natural resources;

• Ashley, Caroline. May 1998. Intangibles matter: non-financial dividends of Community-based Natural Resource Management in Namibia. Report produced for WWF, LIFE Programme.

¹⁸ Relevant reference documents include:

- Directorate of Forestry (DF), Ministry of Environment and Tourism (MET). 1996. Forest Biodiversity for Present and Future Generations. *Namibia Forestry Strategic Plan*.
- DF/MET. 31 March 1999. Namibia Forest Development Policy.

- promote public awareness of and information on bio-trade issues and on national legislation relating to access to genetic resources and related traditional knowledge, notably at the community level; and
- develop an effective benefit-sharing framework that will enable communities to generate revenue and other benefits for themselves.

Proposed institutional mechanisms for achieving some of these objectives include:

- harmonisation of regional frameworks;
- a National Forum on Traditional Knowledge (building on the existing Traditional Knowledge Focal Group);
- a national Indigenous Knowledge Fund; and
- a national regulatory body – the National Competent Authority mentioned in Section 3.3 above.

It is clear from these aims and objectives that the 10-year strategic plan of action places considerable emphasis on the continued customary use of biological resources and related traditional knowledge.

4.2.3 The issue of land resource tenure

One issue that requires further consideration and progress is that of land and resource tenure. There is a urgent need to establish and enshrine appropriate land resource tenure structures to encourage equitable and sustainable socio-economic development in post-independence Namibia. One fundamental concern is to enhance (individual and group) security of tenure – concerning land, biological resources, and other natural resources – particularly in the communal lands, so as to clarify rights of access and use of natural resources in those lands. A Communal Land Bill has been under development in Namibia for nearly 10 years. One of the contentious issues has been whether and how provisions for establishing group tenure arrangements should be introduced. It is hoped that the Bill will be finalised and passed in the near future.

A nationwide analysis of the biodiversity impacts of land use and land tenure systems in Namibia, planned since 1997, is now receiving seed funding from the World Bank for detailed planning. This project is being developed by the NNBP in close association with the Ministry of Lands, Resettlement and Rehabilitation, as well as other key stakeholders and agencies, and should provide significant guidance to Namibian land use planning and land reform processes.

4.2.4 The need for building awareness about the continued importance of traditional knowledge

The rate of erosion of traditional knowledge of biodiversity and of customary use of genetic resources has never been so high in Namibia as in the current generation. Yet customary use of resources and traditional knowledge systems continue to have an important place in the conservation and sustainable use of biodiversity. It is essential therefore to build awareness, particularly among young people, that traditional knowledge and practices are not necessarily a thing of the past but still have an important role in today. Such awareness-building should be incorporated in teaching materials and programmes at primary and secondary-school level. The message should be conveyed to the younger generation that:

- it is important to value and have respect for traditional systems of living, culture, knowledge, practices and technologies;
- it is not necessarily old-fashioned to continue to adhere to traditional approaches to ensuring sustainable livelihoods; and

- the challenge is not to preserve tradition, but to identify those elements in traditional systems that are worth keeping and to look for ways to integrate these elements with new knowledge, insights and ways of living, based on modern scientific methods and market-based commercial approaches to sustainable resource use and management, and related benefit-creation and sharing.

4.2.5 The need for creating incentives to enhance the role of traditional knowledge systems

Mere awareness-building is not sufficient, however. It is also necessary to create incentives to enhance the role, stability and maintenance of, and the respect for, traditional systems of knowledge, practices and innovations. This could be done in various ways, such as:

- ensuring security of land resource tenure and guaranteeing customary rights to resources;
- recognising and upholding rights for communities to practice their own cultures and languages;
- recognising and protecting traditional collective intellectual property rights;
- providing for adequate compensation (monetary and non-monetary) for the use of traditional knowledge;
- enhancing the status (and capacity) of traditional authorities;
- facilitating the transmission (oral and written) of traditional knowledge from the older to the younger generation in all formal and non-formal education systems;
- recognising customary law and making statutory law consistent with existing customary law; and
- enforcing statutory natural resource laws in ways that respect customary systems and treat them fairly.

4.2.6 The need for capacity-building

It is also very important to build the necessary capacities, institutional and individual, at all levels to be able to ensure the continued customary use of genetic resources and related knowledge. Awareness-building and incentive-creation, and related necessary capacity-building, to strengthen customary systems of resource use and enhance the protection and use of traditional knowledge are major objectives of Namibia's 10-year biodiversity strategy.

4.3 How to make provisions for the exploitation and use of intellectual property rights

4.3.1 Provisions in Namibia's draft *sui generis* legislation

Article 4 of the Access to Biological Resources and Associated Traditional Knowledge draft legislation specifies the information to be provided by any application for access to biological resources and related knowledge, for the purpose of collection, research or other uses. As far as research is concerned, this information includes:

- the type and extent of research;
- description of the manner and extent of local and national collaboration in the research (and development);
- the identification of the national institution(s) which will participate in the research;
- the identity of the location where the research (and development) will be carried out; and economic, social, technical, biotechnological, scientific, environmental, or any other benefits that are intended, or may be likely to, accrue to the country and local communities providing the biological resource as well as the collector (researcher) and the country(ies) where s/he operates;

- the proposed mechanism and arrangement for benefit-sharing;
- description of the innovation, practice, knowledge or technology associated with the biological resource; and
- an environmental and socio-economic impact assessment.

Articles 12-16 of this draft legislation specify, *inter alia*:

- the conditions of research-related access (e.g. prior informed consent by the concerned communities) pertaining to academic and research institutions;
- the types of research permit granted (i.e. academic research permit or commercial research permit);
- restrictions on activities (including research activities); and
- contravention and penalties.

In implementing this legislation, an appropriate balance will have to be struck between regulating research-related access to biological resources and related knowledge – so as to ensure fair benefit-sharing and/or to prevent bio-theft under the mantle of research – while not stifling legitimate research activities that are (or would be) beneficial to Namibia and local communities. The granting of time-limited renewable blanket research clearance for national research institutions is an existing mechanism that can be used.

4.3.2 Enhancing domestic value added and developing a domestic R&D capacity

Another critical issue is to encourage and develop mechanisms for research – and in the future, process research and product development – on biological resources and related traditional knowledge in Namibia, so as to maximise local value added and build national R&D capacity. There is certainly scope for R&D partnerships involving national research institutions like the University of Namibia (UNAM) or the Polytechnic School and suitable foreign partners.

The case of Devil’s Claw bio-trade from Namibia, for instance, shows that a much greater percentage of the overall trade benefits could be appropriated within Namibia, if there was a domestic processing capability or at least a capacity to monitor the quality of all dried produce destined for export and leaving the country. In addition, much greater monetary benefits would end up with the local harvesting communities, if they were able to organise themselves better and bypass the chains of middlemen between harvesting and export.

In cases like that of Devil’s Claw where the traditional knowledge (collective intellectual property) has left Namibia and where processing facilities have been set up in the North, one option for increasing local value added would be to relocate the processing units from the North to a developing country like Namibia. In certain circumstances, this may be attractive to trans-national companies from the point of view of minimising costs and building public image, while it could lead to technology transfer as well as value transfer to the developing country¹⁹.

¹⁹ It has been reported that Nestle is contemplating the relocation of chocolate-processing plants to developing countries.

4.4 *How to take into account the possibility of joint ownership of intellectual property rights*

In principle, it would be possible for two or more partners to create a legal entity and apply for a joint patent on a novel product or process derived from biological resources and related knowledge in Namibia (or elsewhere). Perhaps a more common option would be for one of the partners to apply for the patent and to pay royalties (and/or up-front payments and/or milestone payments) to the other partners, on the basis of a written contractual agreement. Yet another mechanism would be a ‘no-disclosure’ agreement among the partners, using the ‘trade secret’ regime of intellectual property protection.

There is very little experience in Namibia to guide the role, if any, that joint ownership of intellectual property protection might play under conventional regimes of IPR (patent legislation) or under *sui generis* IPR protection systems.

5. CONCLUSIONS

A number of conclusions can be drawn from this paper:

- Given the loss of biological resources from Namibia’s territory and waters to date, there is a need for policies, legislation and effective action on the ground to regulate access to genetic resources; protect traditional knowledge and practices; and facilitate equitable benefit-sharing in the use of genetic resources.
- While commercial use and trade of wildlife is in its infancy in Namibia, there are some cases of bioprospecting and bio-trade that provide valuable learning experience, such as those involving commercial use of Devil’s Claw, Marula fruit, succulent plants, watermelon, !Nara fruit, Monkey oranges, and Manketti nut.
- Some of the conceptual underpinning of policy and legislative initiatives to regulate access to genetic resources and ensure equitable benefit-sharing is both complex and subject to changing realities and perceptions. Terms like ‘traditional knowledge’, ‘customary rights and responsibilities’, and ‘community’ may turn out to be context-specific and hence defy easy and unequivocal generic definition. Their meanings may have to be clarified and agreed on a case-by-case basis.
- Recognition of the limitations of conventional IPR systems when applied to biological resources has led to Namibia’s attempt to develop *sui generis* legislation to regulate access to genetic resources and associated traditional knowledge and to provide for equitable benefit-sharing arrangements. The new draft legislation introduces a novel intellectual property regime for the protection of traditional knowledge, innovations and practices, based on new concepts such as traditional resource rights and community intellectual rights.
- The new *sui generis* system ensures consistency between Namibia’s responsibilities regarding intellectual property protection of biological resources, under the CBD on the one hand, and TRIPS on the other.

- Namibia's draft *sui generis* system is designed to ensure the continued customary use of genetic resources and related knowledge by seeking to control access to customary knowledge and practices, while not restricting the traditional customs and practices themselves.
- Regulation of research-related access to genetic resources must carefully balance the need for control to ensure benefit-sharing and prevent bio-theft, on the one hand, and the importance of encouraging legitimate research activities, on the other.
- Implementation of *sui generis* legislation is even more difficult than its development, given the severe institutional capacity constraints on the ground. This underscores the need for capacity-building.
- Concerns for greater social justice – in terms of empowering local people and communities by granting secure resource access rights – have also been a driving force behind, and are reflected in, Namibia's draft *sui generis* legislation, in a similar way to Namibia's existing Communal-area Conservancy legislation and new Communal Land (tenure) legislation.

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APPENDIX 1: A CASE STUDY ON BENEFIT-SHARING ARRANGEMENTS: NAMIBIAN DEVIL’S CLAW (*HARPAGOPHYTUM SPP.*)

1. Overview

This case study reviews the efforts of the Sustainably Harvested Devil’s Claw (SHDC) project in Namibia to secure better benefit-sharing arrangements for Namibian harvesters of a tuber with medicinal applications. It briefly describes the project’s environmental, socio-economic, policy and commercial context at local, national, regional and international levels, and discusses key questions related to sharing benefits derived from cross-border genetic resources which have been commercialised for some time. Finally, it suggests a simple and practical approach to maximise harvester benefits while such questions are being resolved.

1.1 Main players involved

The primary beneficiaries of SHDC have been 328 registered harvesters of Devil’s Claw (representing around 1,600 household members) organised into Harvesters’ Committees on 18 pre-independence resettlement farms in the Omaheke Region of Namibia. The target beneficiaries of SHDC are the estimated 10,000 very poor Namibians who earn a cash income from harvesting Devil’s Claw.

CRIAA SA-DC^{20*} started the pilot phase of SHDC in 1997 at Vergenoeg Farm. The project has been funded by the Oxfams in Namibia (including Oxfam Canada, Intermon of Spain and Oxfam UK and Ireland), the EC Food Aid Counterpart Fund, the Canada Fund, Namdeb Social Fund and ILO INDISCO²¹. In 1999 SHDC contributed to the establishment of a national Devil’s Claw Working Group (DCWG)²².

Government institutions that have supported SHDC include:

- Omaheke Regional Governor’s Office
- Ministry of Environment and Tourism (MET)
 - Directorate of Specialist Support Services* (DCWG Chair)
 - Directorate of Environmental Affairs
 - Directorate of Forestry
 - Directorate of Resource Management
- Ministry of Agriculture, Water and Rural Development (MAWRD)
 - National Botanical Research Institute*
 - Directorate of Planning*
- Office of the President
 - National Planning Commission

* Members of the Devil’s Claw Working Group (DCWG)

²⁰ Centre for Research, Information and Action in Africa: Southern Africa Development and Consulting (Namibian not-for-gain association with French roots)

²¹ International Labour Organisation – Inter-regional Programme to Support Self-reliance of Indigenous and Tribal Communities through Cooperatives and Self-help Organisations

²² Officially constituted by MET in 2000, the DCWG’s objective is “to provide input into the management and utilisation of Devil’s Claw in Namibia, thereby contributing to the safe-guarding of the species and its sustainable utilisation by Namibians... [and to] provide a forum for the exchange of information, consultation and co-ordination...”

NGOs that have supported SHDC include the Omaheke San Trust (OST), the Working-group of Indigenous Minorities in Southern Africa (WIMSA) and the Oxfams in Namibia (through the Omaheke Integrated Development Programme).

From the private sector a key SHDC partner has been the exporting firm Gamagu, owned by Mike and Sabine Krafft of Dordabis. The Organic Herb Trading Company (formerly Hambleton Herbs) of the UK played a key role in the very early phases of the project and remains supportive. There have been negotiations with other European phyto-pharmaceutical companies, but at this stage none of these can be described as an active partner.

The University of Namibia* (UNAM), the Polytechnic of Namibia and the University of Cologne have supported research aspects of the project. The German Department of Nature Conservation (*Bundesamt für Naturschutz*) supports basic ecological and physiological research linked to SHDC.

1.2 Ecosystem, species and genetic resources involved

The ecosystem in which SHDC operates can best be described as partially degraded Kalahari woodland and shrubland. It is a semi-desert environment with a low and variable rainfall (250 to 350 mm/a) and deep sands, which make surface water a rarity. Agriculturally the area is used for extensive grazing, which has increased considerably in the past century due to the availability of water from bore-wells. The resettlement farms are relatively densely populated and heavily grazed. For settlers without livestock, Devil's Claw harvesting often constitutes the only source of cash income.

Devil's Claw (family Pedaliaceae, species *Harpagophytum procumbens* (BURCH.) DC. ex MEISNER 1840, ssp. *procumbens*) is a perennial prostrate vine that grows in deep Kalahari sands, mainly in Namibia but also in Botswana and some northern parts of South Africa, with the ssp. *transvaalensis* possibly occurring just inside Zimbabwe as well²³. The plant has a strong taproot with a number of secondary storage tubers growing off it – these tubers are listed in the European Pharmacopoeia and are used mainly in the treatment of rheumatism and arthritic ailments. There is a growing international demand for Devil's Claw because it contains compounds that combine analgesic and anti-inflammatory properties with minimal side-effects.

Namibia is the main (and most drought-prone) distribution centre of *Harpagophytum procumbens* and the genetic biodiversity of this species has been the target of European and South African efforts to collect high-yielding strains for use in domestication and cultivation trials²⁴. In March 2000, a German proposal to list the plant on Appendix II of CITES was postponed (see Section 2.3: *Impacts of the CITES proposal* below for a more detailed discussion of the effects of this proposal).

1.3 Type of benefit-sharing arrangements and expected results

SHDC aims to establish and facilitate a long-term working relationship between locally organised groups of Devil's Claw harvesters and the market (at this stage a reputable Namibian exporter of the dried tubers). Efforts to link harvesters directly to a large European pharmaceutical company have not succeeded yet. The vision of the project is to create a clear and long-term market link between participating harvesters and upstream national and international operators, on the basis of a superior product.

The SHDC harvesters voluntarily use sustainable harvesting techniques and are assisted (through pre- and post-harvest ecological surveys) to set local harvesting quotas and to ensure that good

²³ Schmidt *et al.* 1998

²⁴ Schmidt *et al.* 1998; McVeigh 2000

resource management practices (not disturbing taproots, refilling holes etc.) are adhered to. They strive to provide a high-quality product (tubers are sliced with stainless steel knives to prevent discolouration and dried on shade-net racks to avoid contamination by sand). The product is certified as organic by the Soil Association of the UK²⁵.

Harvesting groups are equipped with scales and have access to secure storage facilities. This allows them to know exactly how much each harvester is supplying, how much the group is harvesting, and to collate commercially viable quantities of Devil's Claw at central points where it can easily be collected by the exporter. In return, harvesters are paid a premium price directly by the exporter (at least 50% – and in some cases up to 1000% – more than prices paid by informal-sector middlemen²⁶).

Subject to successful extension to a larger area of the Devil's Claw range – a process that has been initiated – it is expected that SHDC will result in:

- Continued sustainable utilisation of an important natural resource to secure cash income for its traditional users and other poor people in rural areas
- An increased share of total income accruing to harvesters
- A long-term and mutually beneficial relationship between harvesters and upstream operators (exporters, processors, pharmaceutical users)
- An opportunity for traditional wild-harvesters to avoid being forced out of the supply chain by possible domestication and cultivation of the plant

1.4 Time frame

SHDC started on one farm (Vergenoeg) in 1997 and by 1999/2000 had expanded to 17 other farms. Options for further expansion are being investigated. The project is envisaged to continue indefinitely, although not in its present donor-funded form.

1.5 Relevance to CBD

SHDC was initiated without overt reference to the CBD, but the project is highly relevant to the Convention in that it:

- Encourages *conservation and sustainable use* by increasing the perceived long-term value of the plant to the harvesters
- Facilitates *sustainable use* through the dissemination of sustainable harvesting and resource management practices
- Results in a larger *share of benefits* accruing to harvesters and the holders of traditional knowledge
- Informs harvesters of their rights and market opportunities and encourages them to insist on *equitable compensation* for the use of their genetic resources

²⁵ This involves an annual inspection of production areas and storage facilities, and a fully traceable audit of certified material. The Soil Association is used because its certification is recognised by all the relevant authorities.

²⁶ Prices outside the project range from N\$1.00/kg to N\$8.00/kg, while SHDC harvesters received N\$12.00/kg (plus, for 2000, a bonus of N\$1.00/kg on sales).

2. Context

2.1 Biological resources

The plants

The genus *Harpagophytum* comprises two species, *H. procumbens* (with two sub-species, *procumbens* and *transvaalensis*) and *H. zeyheri* (with three sub-species, *zeyheri*, *sublobatum* and *schijffii*). Only *H. procumbens* is included in the Pharmacopoeia as a medicinal herb. It occurs in Namibia, Botswana, South Africa and possibly Zimbabwe. *H. zeyheri* occurs in these four countries as well as in Angola, Zambia, and Mozambique. *H. zeyheri* is harvested and marketed as ‘fake’ *H. procumbens*. It is also subject to ongoing phyto-pharmacological research, but not preferred in the trade because of its lower concentration of active ingredients, believed to be mainly iridoid glycosides such as harpagoside, procumbide and harpagid.

In English the plants are called Devil’s Claw or Grapple Plant because of the very sharp, hooked form of the woody fruits. These fruits are distributed by hooking onto animals and being carried away. They are shaped in such a way that ripe seeds will be shaken out of old fruits while the animal walks. Seeds will also germinate close to the mother plant after being released by decaying pods.

The deep Kalahari sands in which Devil’s Claw is most at home are very fast draining and the rainfall of the region is low and fickle. The secondary tubers of Devil’s Claw are water and nutrient storage organs evolved to cope with such a habitat, as is the plant’s habit of dying back after fruiting and re-sprouting in spring.

Traditional harvesters have long known that plants will survive harvesting of tubers as long as taproots are not disturbed too much. This knowledge forms the basis of current guidelines for sustainable harvesting, which stress leaving taproots undisturbed, harvesting only a portion of tubers (and only after fruit-set) and refilling the harvesting holes.

The growth rate of Devil’s Claw, and especially the tubers, under different conditions is obviously a key consideration in determining sustainable harvesting rates and the rest periods required before re-harvesting. There is some evidence that sustainable harvesting can stimulate vigorous re-growth under favourable garden conditions, and that leaving taproots undisturbed greatly aids survival of harvested plants²⁷. Knowledge about these parameters is sketchy, but subject to current research. Figures contained in the limited literature on the subject vary from no tuber growth under drought conditions²⁸ up to 3 kg tubers (300 g dry weight) per year under favourable conditions²⁹.

To set quotas SHDC has used a mean tuber growth rate of 200 g dry weight per two years and halved it, calculating off-take at 100 g dry weight per plant per year. Follow-up ecological surveys seem to support the sustainability of such an off-take rate, at least under the relatively drought-free conditions that have prevailed in the harvesting area since the inception of the project³⁰.

²⁷ Burghouts 1985, quoted in Strohbach 1999b

²⁸ *ibid.*

²⁹ Von Willert & Schneider 2001

³⁰ Strohbach 1998 & 1999a. In 2001 the Omaheke Region received late, poor rains and quotas were set substantially lower.

The plant population

In the absence of cultivation techniques which work despite the many and varied agricultural constraints on an Omaheke resettlement farm, natural recruitment is key to the survival of the population. Mature Devil's Claw plants are very hardy, but there are opposing views about recruitment vigour. Some believe it to be an invasive weed favoured by heavy grazing and disturbed ground; others maintain that it has low competitive strength and tends to disappear under the impact of very heavy grazing pressure, or in ecological niches dominated by grasses³¹. As in many desert species, seeds germinate erratically over several seasons, probably to maximise the survival chances of seedlings. There is anecdotal evidence that harvesting encourages recruitment by burying ripe fruits and creating patches of disturbed soil³².

As discussed below, the SHDC project areas are subject to higher grazing pressures than most of the Devil's Claw range – another factor that could play a significant role in resource sustainability. The leaves are readily grazed by livestock, although the vines are very tough and have been known to cause bowel obstructions in horses and donkeys. Personal observations suggest that grazing pressure (mostly from goats) is a significant factor only in very heavily grazed areas close to settlements and water points, and then mostly during the spring, when Devil's Claw re-grows from tuber reserves before other grazing becomes available. The effects of grazing are being researched in more detail at present.

There has been no comprehensive range-wide survey of Devil's Claw, although one is planned in Namibia as part of the national Situation Analysis currently being organised by the Devil's Claw Working Group, and other range states might follow suit to comply with the CITES decision (see below). Population figures currently cited in the literature are therefore local and/or anecdotal. Population densities have been reported as varying from less than one to more than 2,000 plants per hectare³³.

Plants tend to occur in definite population clusters, which can possibly be explained by the adventitious establishment of a single mother plant due to the animal-borne seed dispersal described above, followed by a local population increase. However, there might also be a correlation with groundwater availability and competition for this resource from other deep-rooted plants. This needs further investigation.

Sustainability and regulation

Concerns about the sustainability of harvesting go back to 1975 at least, by which time exports from Namibia had risen to 180 tonnes per year. In 1977 Devil's Claw was listed as a protected species under the Nature Conservation Ordinance. In terms of this ordinance, permits were required to harvest the plant. However, a study³⁴ established that only 10% of the harvested Devil's Claw was being harvested with a valid permit, and the permit system for harvesting, possession and transportation of Devil's Claw was subsequently discontinued, as it could not be effectively implemented. Permits thereafter continued to be required only for the export of Devil's Claw and were mainly intended as a way to monitor exports – no quotas or other limitations were imposed.

Increasing concerns regarding possible over-utilisation, as suggested by the dramatic increase in Namibian export of dried Devil's Claw from approximately 300 tonnes in 1996/7 to over 600 tonnes in 1998/9, as well as reports of unsustainable harvesting practices and exploitative prices

³¹ var. *pers. comm.*; CITES Proposal 11.60

³² Cole 1999

³³ Schmidt *et al.* 1998

³⁴ Nott 1986

being paid to harvesters, prompted the Government of Namibia to reintroduce a permit system for the harvesting of Devil's Claw in 1999. Initial statistics suggest that exports were significantly lower in 2000, and exporter stocks correspondingly higher – this is attributed to the negative message sent to the market by the proposed CITES listing (see below).

Endangered species?

At this stage it is impossible to say for sure whether Devil's Claw as a species is threatened or not, due to a lack of scientific evidence. Over the entire range, significant populations are protected in the vast Central Kalahari Game Reserve (Botswana) and transboundary Kgalagadi Park (Botswana/South Africa), while other populations in Botswana and Namibia are probably protected by their remoteness and inaccessibility.

In Namibia a comprehensive population survey would need to investigate and clarify, and a balanced assessment of the population would need to weigh and reconcile, at least the following perceptions raised by various stakeholders:

- The heaviest resource pressure occurs in the immediate vicinity of some harvesting communities on communal land and resettlement farms, where a combination of unsustainable poverty-driven harvesting and severe over-grazing threatens local populations – local extinction would be an economic blow to these communities, but not a threat to the species except as a form of genetic erosion.
- On most commercial farms in the southern and western parts of the plant's range, farmers do not have enough labour to harvest much for their own account and are reluctant to allow 'strangers' onto their land due to problems with farm security, stock theft and poaching. However, it is important that sustainable harvesting techniques be extended to these areas to mitigate potential adverse effects if and when harvesting increases.
- In the largely waterless area between the Rietfontein Block and Gam, intensive opportunistic harvesting takes place, but total resource pressure is low due to the absence of permanent populations, limited grazing and few access roads. Nevertheless, much of the harvesting in this area is done by lowly paid and inexperienced hired labourers working for freebooting entrepreneurs, who more often employ unsustainable techniques (harvesting whole plants, not filling holes). There is an urgent need to extend the message about sustainable harvesting techniques to harvesters operating here (this is currently the main target area for the expansion of SHDC).
- There is a general under-reporting of harvesting rates due to undeclared exports to South Africa. The actual off-take might be much higher than that suggested by official figures, with the resource being decimated by stealth.

What is clear from these (sometimes conflicting) perceptions is that Devil's Claw population dynamics in Namibia are not uniform in all areas. A comprehensive survey must distinguish between populations under various forms of tenure, management and consequently pressure.

2.2 Physical environment

Devil's Claw grows in areas with sandy soils, a low unreliable rainfall, a short rainy season and high evapo-transpiration rates.

While it is beyond the scope of the present paper to present a detailed analysis of the Kalahari environment, the following brief points are directly relevant:

- The overall human population density is low in the distribution area, but unusually high on the resettlement farms targeted by SHDC (e.g. at Vergenoeg farm some 1,500 people share about 10,000 ha of marginal land).
- The area is suitable for livestock (cattle and goat) production but very marginal for cropping.
- Where reliable underground water sources have been made available by drilling they tend to be weak and very deep (>200 m), limiting the potential for irrigation.
- Because the spatial distribution of livestock in the region is determined by the limited and highly localised availability of water, areas around water points tend to be over-grazed.
- A number of wild foods occur, but they tend to be inaccessible to the people who would use them because they grow on commercial cattle ranches where traditional users are no longer allowed to harvest, or else they are over-subscribed because of the population pressure and desperate nutritional situation on resettlement farms.
- Road and communication infrastructure is very thinly distributed in the region, leaving many people effectively cut off from the outside world and its services (transport, education, health care etc.)

These physical and material limitations add up to very restricted livelihood options for rural people who do not own large herds of livestock (including most residents of resettlement farms, and most Devil's Claw harvesters). The cash income earned from Devil's Claw harvesting therefore plays a crucial role in food security and in allowing people to access transport, health care and education.

2.3 Socio-economic context

The people

The majority of the SHDC participants are ethnic San (Ju/'hoansi and Nharo) who have lived in this area for many centuries. Contrary to the popular perception of San as nomadic hunter-gatherers, the Omaheke San were – prior to conquest by the Herero and/or colonisation by Germany and South Africa – organised into relatively stable social groups firmly attached to particular areas known as *n!ores* (averaging about 6000 ha in size, which is remarkably similar to the average size of the present commercial farms in the area)³⁵. To a significant extent this attachment to particular places, and the detailed expert knowledge of local resource availability and management that results from it, was preserved for some time after colonisation by the practice of allowing large bands of San to stay on commercial farms as a source of cheap labour. In the past 20 years this pattern has been deeply disrupted by socio-economic and political developments that led to a marked reduction in farm employment.

While acknowledging the historic ties of the San to the region, the SHDC project is not organised according to an ethnic model and includes many people from other ethnic groups, especially Damara. The best socio-economic description of the communities on resettlement farms is probably that of 'displaced generational farm workers'. These are people who have been deprived – through a

³⁵ See Suzman 2000 and 2001

process of colonisation, absorption into the colonial economy as farm labour for several generations, and subsequent unemployment – of any land rights they might once have had in other parts of the country.

In recent years, these generational farm workers have been the victims of a general reduction in farm employment in the region, due to a complicated interaction of economic and political factors including the conversion of stock farms into game ranches and tourist lodges, concerns about farm security, pressure on farm incomes, and new labour and social security legislation – seen by some farmers as bureaucratically too onerous and cumbersome to comply with on behalf of large numbers of employees.

Having been dismissed from their places of employment, generational farm workers had nowhere else to go and literally found themselves ‘on the road’ – living in road reserves and other scraps of state land, or squatting in informal settlements on the verges of urban centres, where they struggle to survive due to a lack of the skills needed to secure non-agricultural employment. Many of these people have been resettled under very difficult conditions on Government-owned farms in the Otago Region. From their ranks come the SHDC harvesters.

‘Community’ organisation

While the majority of resettlement farm residents share a recent history of colonial dispossession, economic exploitation, occupational redundancy, homelessness and resettlement under adverse conditions, they have been thrown together by fortune only in the past decade or two and are therefore as yet only superficially united by their shared experiences. To the extent that they are a ‘community’ at all, they are a community restricted by weak institutions and underdeveloped internal decision-making bodies.

This lack of social cohesion is further complicated by power relations that result from more or less external discourses. So, for example, the people who live on a resettlement farm have to contend simultaneously with loci of power and/or authority rooted in, amongst others:

- Preserved or re-established traditional authority structures, which have certain powers over land allocation and resource use rights
- Community Development Committees which have some powers over economic activities and opportunities to take part in community activities
- Water Point Committees which have a responsibility to manage local water supply, and consequently powers over sharing out water use rights
- The relevant Government Ministry (usually the Ministry of Lands, Resettlement and Rehabilitation, but in the case of the Tjaka Ben-Hur farms the MAWRD) formally administering the farm.

Adding to the institutional brew are:

- Various NGOs and the project committees they generate
- Various government institutions involved in regulating resource use or delivering services (e.g. Directorate of Forestry, Ministry of Health and Social Services, Ministry of Basic Education)
- Class divisions (e.g. between people who have external sources of income to invest in transport and/or small businesses, and those who have nothing)
- Conflicting resource-use patterns and priorities (e.g. between Devil’s Claw harvesters and livestock owners)

Under these conditions simplistic notions of ‘community’ are not helpful. The SHDC approach has been to register the existing harvesters of Devil’s Claw and help them to organise themselves into groups, each with a co-ordinator responsible for weighing, storage and record-keeping. Through capacity-building (e.g. training in conducting good meetings) and empowerment (e.g. respect for traditional knowledge and a real say in resource-use decisions) SHDC has contributed to the overall institutional capacity of the emergent communities on resettlement farms. It is expected that such empowerment of harvesters will also contribute to Devil’s Claw issues being better represented at, and considered by, other power loci.

Traditional knowledge

The indigenous San and Khoi peoples of southern Africa have used Devil’s Claw medicinally for centuries, if not millennia. It has also been adopted into the traditional knowledge systems of immigrating Bantu-speakers who arrived in the area between 1 500 and 500 years ago (the modalities of this integration are not known, but it seems very likely to have been learned from the San). In addition to general anti-inflammatory and analgesic use, ethno-medicinal uses have been recorded for dyspepsia, fever, blood diseases, urinary-tract complaints, post-partum pain, sprains, sores, ulcers and boils³⁶.

Although the plants were first collected and described by European scientists in 1820, the medicinal properties of the Devil’s Claw were only ‘discovered’ in Namibia in 1907 by a German colonist called G.H. Mehnert, as a result of his direct reference to the indigenous knowledge of the Khoi and San people³⁷. A family anecdote suggests that this transfer of knowledge might not have been so readily forthcoming, and that Mehnert eventually had to do some ‘low-profile fieldwork’ to learn the identity of the medicinal plant so widely used by the people living on his farm³⁸.

This early bioprospector exported some dried Devil’s Claw tubers to Germany, where they were first studied by Zorn at the University of Jena in the 1950s. By 1962 the company Harpago (Pty) Ltd started exporting the tubers in larger quantities to the German company Erwin Hagen Naturheilmittel GmbH³⁹. At that stage the dried roots were used to make a bitter tea used mostly against dyspepsia and as a general ‘blood cleanser’. An early (undated) advertisement for Harpago Tea puts it very succinctly:

“Through the ages the black witch doctors have been familiar with the health-giving effects of Harpago Tea. Their secrets have now been discovered by science.”

This appropriation of indigenous knowledge about botanical resources would have been a clear case of ‘biopiracy’ if it had occurred after 1992. It is relevant to the CBD because of the questions it raises about retrospective benefit-sharing as a way to encourage conservation, sustainable use and equity.

Specifically, the case of Devil’s Claw raises issues about the goodwill of the pharmaceutical industry towards those traditional users who had their indigenous knowledge appropriated before it was protected by international law, and the ways in which such traditional users can be helped to translate best-practice resource management into a share of the benefits. Unfortunately the industry seems intent on supporting cultivation, which will benefit colonial farmers at the expense of the owners of traditional knowledge about the resource.

³⁶ Wegener 2000

³⁷ Wegener 1998; U. Fechter, telefax

³⁸ R. Wynberg, *pers. comm.*

³⁹ U. Fechter, telefax

Commercialisation and trade: the Namibian-German connection

The international Devil's Claw trade grew from small samples in the 1950s to around 700 tons annually by the turn of the century. As the first – and by far the largest – producer of Devil's Claw, Namibia played a crucial role in the development of this market.

In this regard it is relevant to recall the highly exploitative labour policies of the South African colonial administration in Namibia during the period when this market was being developed. Put simply, there was enough Devil's Claw harvesting going on to build a market because colonial and apartheid policies had made significant numbers of people so poor that they had no other option. The modern Devil's Claw industry did not spring into existence fully grown – it is the result of a long process of appropriating the indigenous knowledge of Namibians and exploiting their colonial disenfranchisement and desperate poverty.

Namibia's key role in the commercialisation of the plant is also reflected (through the colonial link) in the dominance of German pharmaceutical companies in the Devil's Claw market⁴⁰. German consumers were among the early users of natural medicine in Europe and created an early demand for Devil's Claw. The fortuitous coincidence of colonial supply and domestic demand encouraged German pharmaceutical companies to invest in laboratory analyses, clinical trials, product R&D, processing technology and advertising. It also resulted in most of the Namibian export trade being controlled by Namibians of German descent.

The regional trade situation

On the back of the pioneering work outlined above, commercial exports from Botswana started through South Africa in the 1970s. Botswana's production is estimated at less than 100 tons a year. Stakeholders from Botswana complain that their efforts to secure better prices for harvesters are being frustrated by buyers who play them off against Namibian suppliers⁴¹.

South Africa has in recent years become both a major export destination and exporter, with imported material from Namibia and Botswana being re-exported by entrepreneurs in that country. This is seen as a strategy to develop secure markets as part of their plans to domesticate and cultivate the plant⁴². South Africa's own production of wild-harvested Devil's Claw is around 30 tons a year. Current production from cultivation is not known, but is believed to be low.

Stakeholders from all three range states have expressed a need for regional cooperation and policy co-ordination to strengthen the bargaining position of primary producers, and efforts are being made to organise such cooperation. The major issue that would need to be addressed is how to keep poor harvesters in the industry and prevent rich settler farmers in South Africa and Namibia from taking over the market completely.

From traditional remedy to modern phyto-medicine

Applying the Western medical paradigm to Devil's Claw resulted in a focus on the concentration of specific active ingredients (with harpagoside most often used as marker), standard extracts and dosage, and delivery in pill or capsule form – all essential features of 'legitimising' a herbal remedy in the world market. This is nowadays the general trend in herbal medicines worldwide. It is also the key to transforming raw materials into high-value products and thus – potentially – to delivering more benefits to the owners of traditional knowledge and/or primary producers of the raw materials.

⁴⁰ This is more pervasive than it appears, since some companies operating from other European countries are also German-owned.

⁴¹ T. Matlhare, *pers. comm.*

⁴² C. Lombard, *pers. comm.*

Disregarding for the moment the inadequate and unequal benefit-sharing arrangements between Devil's Claw harvesters and end users, it must be acknowledged that without the initial investment of pharmaceutical companies, without the skills that the investment paid for, and without sustained research and marketing efforts, the Devil's Claw industry would not be anywhere near its current size. It is this investment that companies try to protect through various intellectual property rights (IPRs) such as patents, brand names and trade secrets. It can be argued that without the added value derived from such IPRs the benefits available to share would be rather measly. Without prior traditional knowledge, however, there likely would have been no industry at all.

In their concern about IPRs derived from traditional knowledge, developing countries sometimes under-appreciate the fact that the proprietary knowledge of industry is also imperfectly protected. Over the years specific pharmaceutical companies paid for the basic research and regulatory compliance that made Devil's Claw into the widely accepted treatment it has become. This knowledge is now in the public domain and represents a huge 'saving' for new entrants to the market. Such a situation does not encourage investment in the development of new products from genetic resources.

Finding effective and equitable ways for commercial partners to turn an up-front investment in the development of new products into a competitive advantage is obviously a key issue in the development of new products from genetic resources, and in the successful implementation of the benefit-sharing envisaged in the CBD. Namibia's draft *sui generis* legislation on access to genetic resource and traditional knowledge seeks to address this problem by proposing a tripartite contractual arrangement (including suppliers, users and Government).

Who adds value and who benefits – and how much?

It has been estimated that more than 10,000 harvesters in Namibia rely on the harvesting and sale of Devil's Claw to generate a significant proportion of their cash income. This money is doubly valuable because it is distributed in remote areas where few other sources of income are available. Nevertheless, a typical Devil's Claw harvester only earns somewhere between US\$10 and US\$50 a year from harvesting – a clear demonstration of the extreme poverty of harvesters.

Namibian exports of Devil's Claw have been estimated to be worth more than N\$10 million – and possibly as much as N\$15 million – in foreign exchange earnings per annum⁴³. This represents a significant contribution to the economy. More than 50% of this income accrues to a handful of exporters and other middlemen. Apart from the initial post-harvest slicing and drying, the only valorisation effected in Namibia consists of milling and packaging, but the volumes processed are insignificant. An aqueous-alcoholic extract from South Africa is, ironically, imported into Namibia.

Over the last 25 years the Deutschmark price of Devil's Claw has dropped by 85%, with Namibian harvesters and exporters kept in the trade by the continued weakening of the local currency⁴⁴. Even so, the current price of dried Devil's Claw tuber on the international market (around US\$3.00/kg, FOB in a European port) is not a reflection of the value of the raw material, or of the inputs by harvesters in terms of labour and management. Most Devil's Claw is exported to Germany, France, the United Kingdom and Switzerland in an unrefined state for further processing. Other markets, notably in the Far East and the USA, are also opening up. The marketing chain comprises a few companies producing extracts of Devil's Claw, and several more firms that buy these extracts and

⁴³ N\$1 = ±US\$0.13

⁴⁴ M. Kraftt, cited in Du Plessis 1999

include them in proprietary formulations. Strict commercial secrecy prevents an analysis of the profits made at the various stages.

When the retail value of Devil's Claw preparations in Northern markets is calculated on a dry-weight equivalent basis, prices range from US\$300⁴⁵ to US\$700⁴⁶ per kilogram dry tubers. The bottom line is that Namibia captures at most 1% of the value of the trade in Devil's Claw extracts, and harvesters no more than 0.5%. Even when the retail mark-ups, packaging, marketing and processing costs are deducted, it seems obvious that the processors and formulators are making outrageous profits at the expense of extremely poor people. Crushed tuber intended for use in herbal tea sell for about 20 times its import price (40 times what harvesters get) in German pharmacies⁴⁷.

Since the dried tuber slices are in any case milled before processing, SHDC has proposed that a simple way to add a little more value locally and save on shipping costs (by allowing more cost-effective containerisation) would be to do the milling before export. However, repeated requests to European processors for information about their requirements in this regard have simply been ignored, again raising questions about the willingness of the pharmaceutical industry to share even the simplest of benefits with primary producers.

In an aging world, the prospects are good for a natural anti-rheumatic medicine of proven efficacy and with no side effects. Many stakeholders have therefore suggested the possibility of producing Devil's Claw extract in Namibia. While this would be desirable from the viewpoint of value adding and employment creation, several major questions remain unanswered:

- Would it be economically feasible – in terms of volumes and economies of scale – to establish an extraction facility for only one resource? (The European facilities processing Devil's Claw typically process a wide range of other plants as well.) Alternatively, can a Namibian facility secure sufficient quantities of other marketable resources to sustain a multi-purpose extraction facility?
- Would European and other formulators accept an extract produced in Africa as being of equal quality to one produced in Europe?
- Would processing truly increase returns to Namibia, or would the owners of established brands simply conduct their unfair trade one step higher up the value ladder?
- Would a Namibian processing facility really be able to pay higher prices to harvesters, or will they continue to be exploited, this time in the 'national interest'?

Impacts of the CITES proposal

Because of international concerns regarding the increased level of trade, Germany proposed in 1999 that both species of *Harpagophytum* be listed on Appendix II of the Convention on International Trade in Endangered Species (CITES). Appendix II of CITES allows 'controlled trade' in the listed species, but this distinction is not very clear in the public eye where CITES is predominantly associated with pandas, whales, elephants, rhinos, tigers and other highly-endangered animals.

⁴⁵ B. Bennett, *pers. comm.*

⁴⁶ Hammond *et al.* 2000

⁴⁷ P. Siegfried, *pers. comm.*

Namibia and other southern African range states did not support the listing, citing inadequate range-state consultation, lack of data, ongoing national efforts to regulate resource use, and the effects on the livelihoods of extremely poor harvesters. The proposal was later withdrawn, partly as a result of protests by NGOs. In terms of a CITES resolution adopted at the eleventh Conference of Parties (CoP11) in Nairobi in March 2000, Namibia and other range states exporting Devil's Claw are required "to submit to the Secretariat all available information concerning the trade, management, regulatory measures and biological status of *Harpagophytum* species". This information is to be submitted before the next CoP, which is expected towards the end of 2002. The proposal to list has nevertheless had severe negative consequences on the international market, and by implication for the livelihoods of the extremely poor people who rely on wild harvesting for income.

The CITES proposal caused an immediate, and probably temporary, dip in market demand, but its most worrying effect has been the renewed impetus it has given to domestication and cultivation efforts, especially in South Africa. Due to the support given to white farmers by the apartheid state, South Africa has the most developed and efficient agriculture in Africa, and might conceivably produce Devil's Claw at prices and in quantities that would make wild harvesting redundant. This would destroy thousands of rural livelihoods in Namibia and Botswana. The South African *Farmer's Weekly* misrepresented the CITES proposal (emphasis added) thus:

*"A motion to **ban** the international trade in harvested wild Devil's Claw put forward at the... CITES conference in Nairobi in April was withdrawn... temporarily – on condition that agricultural production supersedes the harvesting of wild Devil's Claw by... 2004."* (11 August 2000)

There is probably nothing that Namibia or anyone else can do to stop South African researchers, farmers and entrepreneurs from developing a cultivated Devil's Claw industry, but there is a telling example in this of the inherent contradictions in international development and cooperation. This research has been funded by USAID and GTZ⁴⁸ – large development agencies also active in Namibia and Botswana – with the aim of developing alternative crops for emergent small-scale farmers, and yet there has been no consideration of, or discussions with Namibia or Botswana about, the potentially disastrous effects this might have on the livelihoods of marginalised people. There has also not been any discussion/consideration of how the benefits of such work could also be shared with Namibian owners of indigenous knowledge, or even about what levels of agro-technology would be suitable to agro-ecological conditions in other range states. As one commentator observed, this looks like a clear case of "robbing Peter to pay Paul".

It would seem that the sentiment in certain sectors of the pharmaceutical industry is also shifting against wild harvesting, no matter how sustainable or socio-economically beneficial, and towards cultivation, even if it takes place in the highly exploitative agricultural environment engineered by apartheid. As an example, the only large German pharmaceutical company that ever got so far as to propose a (fundamentally flawed) contractual benefit-sharing arrangement with Namibian harvesters has shifted its marketing hedge bet to cultivation on a white commercial farm in South Africa – with no apparent concern even for the few traditional harvesters who still survive in that country, never mind their counterparts in Namibia and Botswana.

To add insult to injury, genetic material from Namibia and Botswana has been collected without the necessary permits (or even prior informed consent) and is being used in cultivation trials to select high-yielding strains. This is one aspect of the Devil's Claw industry in which the letter and spirit of

⁴⁸ Von Willert & Schneider 2001

CBD is clearly being disregarded, notwithstanding the absence of national legislation on access to genetic resources (which is still being drafted).

Domestication and cultivation, and the sustainable development opportunities they encompass, are the last substantial benefits available for sharing with traditional users, who face severe agro-ecological, institutional and technical constraints in using such opportunities. If the cultivation methods currently being developed can succeed under South Africa's more favourable climatic, human resources and institutional/infrastructural circumstances, but cannot be replicated under the much less developed conditions prevailing in traditional use areas, the expropriation of the original providers of traditional knowledge about Devil's Claw will be completed and the only winners will be the (South African and Namibian colonial) commercial farming and (European) pharmaceutical sectors.

3. Purpose and objectives of SHDC

3.1 Primary motivations

The real motivation for starting SHDC can be traced to the expanding ecological awareness among Northern consumers and their concomitant interest in ethical trade as a tool for conservation. This fast-growing market niche (especially in the UK), combined with reports about the dismal situation of Devil's Claw harvesters, prompted a British trader of herbal products (Mike Brook of Hambleden Herbs/The Organic Herb Trading Company) to commission a botanical resources researcher (Cyril Lombard of CRIAA SA-DC) to investigate the possibility of securing a long-term supply of Devil's Claw which had most or all of the features desired by ethical consumers, including sustainable resource use, environment-friendly (organic) production and socio-economic justice.

Initial investigations revealed that there was no such supply in Namibia or elsewhere, because the harvesters were disorganised and exploited, which in turn led to the widespread use of unsustainable harvesting techniques. Lombard contacted the Oxfams in Namibia – the largest NGO presence in the Omaheke Region – about the situation and obtained funding from them and from the Namdeb Social Fund to start working with harvesters to meet the requirements of the market. This was the start of SHDC, which has subsequently been supported by the stakeholders detailed in Section 1.1 above. The response from harvesters would suggest that there is a definite role for 'honest broker' NGOs to engage in top-down activation of benefit-sharing arrangements to stimulate sustainable use, especially in cases where the traditional resource users are institutionally weak and disorganised.

The primary motivations of the harvesters for participating in SHDC were economic. They were (and outside the project still are) being exploited most horribly by relatively affluent "middlemen" who have access to transport and working capital (usually through employment in Government or the private sector). Because of the spatial isolation and socio-economic marginalisation of Devil's Claw harvesters they are especially vulnerable to an exploitative in-kind trade, with payment made in food and drink at highly inflated prices. The first thing harvesters therefore wanted was a fair cash price. Secondly they wanted a reliable market for their production, so that they could plan ahead and manage their resource. Thirdly they wanted assistance with building their own capacity to manage their harvesting and trade, both in the form of organisational support and with such simple physical things as scales, record books, knives, drying frames and bags.

Harvesters also had other motivations:

- Exchanging information on sustainable harvesting techniques
- Learning and meeting the quality requirements of the market
- Collaborating in efforts to devise appropriate cultivation techniques
- Representing their own interests at policy level
- Securing access to processing technology or other profit centres (e.g. brand names, product image) in the marketing chain

The motivations of private-sector partners have been of two categories:

- The Namibian exporters were motivated, on the one hand, by a desire to support more equitable trade in order to encourage resource sustainability (which is after all in their own long-term economic interest as much as in that of the harvester), and on the other, by an opportunity to secure a reliable supply of high-quality, fair-traded material.
- Prospective European business partners have generally been interested in the potential of the project to address consumer concerns about traceability, ethical supply and sustainable resource use (and the costs of addressing such concerns), but there has been a marked difference between those prepared to walk the long road required to make such arrangements genuine, and those who were only looking for an ‘any-African-will-do’ quick fix to the marketing image of their products.

3.2 Contribution to longer-term objectives

SHDC contributes to more general long-term objectives in the following way:

- To *social development* by boosting the overall organisational and institutional capacity of marginalised rural communities to manage their own resources and trade
- To *economic development* by increasing the earnings of harvesters, distributing cash in a region with few other sources of income, and conserving an important natural resource for use by future generations
- To *sustainable development* in a harsh agro-ecological environment through sustainable use of a hardy perennial desert plant
- To *livelihood security and well-being* through cash incomes and by encouraging sustainable resource management
- To *food security* through expanded income options and cash earnings (and – to an un-quantified extent – through the creation of ‘paid’ opportunities to collect other wild foods that might not themselves warrant a dedicated collection effort)
- To *trade* through resource conservation, a more equitable distribution of profits, and lower collation and collection costs
- To *environmental protection* through increased incomes and an economic incentive to manage and harvest resources sustainably

3.3 Links with CBD

The objectives and motivations of the various participants in SHDC are entirely in line with the CBD objectives of conservation, sustainable use and equity. The provisions of the CBD regarding access to genetic resources and traditional knowledge are also directly relevant to the project. However, there was no explicit reference to the CBD at the outset – the close fit between the project and the Convention can therefore best be attributed to the fact that the CBD codifies sound

development and resource-use principles that had been articulated in other fora long before the CBD was agreed in 1992.

4. Establishing benefit-sharing arrangements

The Devil's Claw harvesters who participate in SHDC are among the most marginalised and powerless people in Namibia. They have limited skills in negotiating and bargaining. While concerted efforts were made to secure their input and to incorporate it into the design of the project, the initial benefit-sharing arrangements had to be made on behalf of harvesters by service NGOs. However, the arrangements contained in SHDC are fluid and evolving, and it is envisaged that harvesters will increasingly articulate their own priorities and expectations as they develop their organisational capacity and become more confident about their rights and powers as resource users.

5. Implementation of SHDC

Devil's Claw has been established in world market for decades, but before SHDC very little thought had gone into sharing benefits with harvesters. In fact, as discussed above, the growth of the industry had been based on extremely exploitative relations of production and trade. Into this situation SHDC introduced a simple model for benefit-sharing arrangements, based on the insight that there is a growing congruence of interests linking ethical consumerism in the North to sustainable resource use and socio-economic equity in the South, and that the proper role of the trade under these circumstances is to link producers to consumers in a way that gives everyone what they want. Essentially this is a question of how to translate the principles of the CBD into a workable business model.

A simple description of SHDC would be:

'Donors (EU, Oxfams, ...) fund a service NGO (CRIAA SA-DC) to activate and organise groups of registered harvesters. Harvesters engage in an exchange of knowledge about sustainable resource use and voluntarily adopt sustainable resource management practices that they have helped to formulate. Harvesters are assisted by pre- and post-harvest ecological surveys to set sustainable harvesting quotas, and to monitor compliance with sustainable harvesting techniques. They elect a co-ordinator and/or record-keeper and are assisted with the provision of knives, drying racks, scales, record-books, clean new bags, storage facilities, extension/liaison services and in securing group harvesting permits. The product is certified organic by the Soil Association (UK). When a group of harvesters has a full load of dried tubers, they contact the exporter (Gamagu) directly or through the SHDC extension worker. The exporter collects the load and pays cash on the spot (for practical reasons collection and payment are sometimes done by project staff on behalf of the exporters, but only when this coincides with other fieldwork and space is available). In return for pre-financing, collating and transporting, the exporter makes a fair profit – negotiations are underway about ways to share this profit with harvesters, and in 2001 a pro-rata bonus was paid on the 2000 harvest. The next step in the process, which would be to link the 'eco-friendly' product directly to a market segment in Europe, is currently being pursued, but has not been achieved yet.

Scope and scale

In 1999, SHDC covered an area of some 307,415 ha. To lower the cost of organic certification, 88 households from 35 commercial farms in the Dordabis district were taught sustainable harvesting and included in the Soil Association's annual inspection, but without any organisational or ecological support (due to financial, logistic and political constraints). In total the project worked with 328 harvesters and households, and produced 10,210 kg of Certified Organic Devil's Claw, which generated N\$122,525. Excluding the Dordabis farms, 240 harvesters from 'SHDC proper' participated, earning N\$67,109 for 5,592 kg of Devil's Claw, or about N\$280 each on average.

In 2000, 162 harvesters from the resettlement farms sold 4,741 kg through the project, earning N\$55,972 (the slight discrepancy in payment resulted from weight lost to drying while in storage, while the lower number of harvesters was due to one major producer group voluntarily deciding not to harvest at all, to give the resource a chance to grow). The implementation of sustainable harvesting techniques by harvesters resulted in higher quotas being set, and average earnings increased to about N\$345 per harvester. A bonus of N\$1/kg was paid on this production in 2001, bringing total income to N\$60,711, or about N\$375 per harvester. During the 2000 season 54 'associate' harvesters from 19 commercial farms in the Dordabis district sold a further 3,326 kg of certified organic Devil's Claw for N\$39,912.

Before and after

Prior to the establishment of SHDC:

- Harvesters received from around N\$1.00 (or even lower) to an upper (and exceptional) amount of N\$8.00 per kg for their dried sliced Devil's Claw. Poverty played a major role in forcing harvesters to sell at whatever price they could get as they could not bargain from any position of strength.
- Harvesters often supplied stock under dubious credit arrangements and were often 'paid' in alcohol or other consumer goods at highly inflated values.
- Harvesters had very poor links to exporters, usually through a series of middlemen.
- Harvesters did not know from season to season if buyers would turn up to purchase their stock, and had limited choices or options regarding buyers.
- Harvesters only sold very limited amounts.
- Harvesters had no idea of the actual weight of the material they sold nor the price they received per kilogram.
- Harvesters had no idea what the product was being used for, outside of their own local utilisation, or even where it was going when it had been sold.
- Harvesters had no opportunity to link better quality to better prices.
- Harvesters had no assistance regarding ecological and sustainability issues.
- Harvesters had no voice in the industry and no opportunity to take up issues with wider stakeholders.

These conditions are similar to those experienced by the majority of Devil's Claw harvesters in Namibia and as such are not specific or exclusive to the primary producers with whom SHDC works. Subsequent to the implementation of SHDC however:

- SHDC harvesters obtain a minimum of N\$12.00 per kg for their dried, sliced Devil's Claw (and earned a bonus of N\$1.00/kg in 2000).
- Comments from other exporters suggest that media coverage of SHDC has encouraged harvesters outside the project to demand higher prices.
- Harvesters are paid cash at strategic stages during the harvesting season.
- Harvesters deal directly with the exporter, with whom they are developing a practical and operational relationship. In some areas it may become prudent to utilise 'functional' middlemen from the rural areas to link with the exporters, but when this is done it will be from a more equitable footing because of the empowerment of harvesters. Harvesters also have access, if necessary, to other important exporters/traders.
- Harvesters can plan their harvesting level and can sell all their stock every season.
- Harvesters can and usually do sell significantly larger quantities than before.

- Harvesters have scales at community storage facilities, which allows them to know how much they produce and sell, and the group to know how much they are selling to the exporter.
- Harvesters have an improved understanding of what the product is used for in the export market, and in some case have even met the importers of their product.
- Harvesters understand and exploit the link between good quality material and the higher prices realised by clean material of known origin with organic certification.
- Harvesters are assisted annually with ecological surveys for quota setting, post-harvest surveys, and organic certification.
- Harvesters and their concerns have since been well represented at various national and international stakeholder fora.
- Harvesters are saving and re-investing some of their earning to buy equipment (e.g. drying racks).

The SHDC project has demonstrated that ensuring good prices, making information available, creating options, strengthening their bargaining position and providing general support can encourage harvesters to take (and make them want to take) responsibility for the management of the resource. Compliance with sustainable harvesting techniques, e.g. leaving the taproot undisturbed and refilling holes, has increased to between 80 and 85%. This is generally not the case in other areas where Devil's Claw is harvested in Namibia.

In conjunction with harvesters, SHDC has also embarked on research specifically directed at improving the position of harvesters, e.g. the impact of harvesting on regeneration and growth rates. In this regard, the input of the harvesters' expert knowledge and experience is crucial. Without encouraging the combination of traditional knowledge and applied science, research would not result in a holistic understanding of the ecology and biology of Devil's Claw.

During 2001, CRIAA SA-DC will be facilitating a formal partnership agreement between SHDC harvesters and the exporter, who have further committed themselves to sharing profits. In 2001 harvesters received an additional income from the sales of 2000 – an effective way to guarantee minimum prices in a fluctuating market and share windfall profits, but also an additional incentive to supply a high quality product and to conserve the resource. The increasingly close two-way relationship being established between harvesters and exporters can only benefit the resource and its users in the long run.

6. *Policy, legislative and administrative context*

6.1 Influence of legislation and policy environment

Namibia has limited institutional capacity to enforce laws and regulations and to turn policy into reality, especially in the remote rural areas where most Devil's Claw harvesting takes place. The result is that harvesters' voluntary adoption and communal enforcement of sustainable harvesting techniques and practices remain key to regulating resource use. However, the ability of organised groups of harvesters to ensure good resource management is closely tied to issues of land and resource tenure, which are often outside their control.

6.2 Helpful policies and regulations

The Namibian Constitution requires that Government supports conservation and sustainable use of natural resources. Government has furthermore adopted a consultative approach to decision-making, which encourages stakeholder inputs into policy and legislation. This has created an

opportunity for Devil’s Claw harvesters to raise their particular concerns and defend their interests, as they did when a new permit system was introduced (see below).

At a more general level, Government supports and encourages community empowerment, rural income creation and local value-adding – policies which all played a role in giving Devil’s Claw harvesters access to national support structures.

Namibia’s current policy on Devil’s Claw harvesting

As outlined above, the permitting system for harvesting and transporting Devil’s Claw that was introduced in 1977 was abandoned in 1986 due to a lack of compliance and enforcement, and permits were thereafter only required for exports. In August 1999, however, the Ministry of Environment and Tourism reintroduced a permit system in response to concerns about over-utilisation, reports about exploitation of harvesters and complaints from some land-owners about unfilled harvesting holes posing a danger to livestock and vehicles.

In its original format, the new permit system drew strenuous objections from harvesters, who pointed out that it effectively criminalised their participation in an activity that was their main source of income, because most of them were illiterate and could not complete the required paperwork. They also pointed out that complying with the systems would require each harvester to make at least two – and possibly several more – trips a year to an MET office, which – given the remoteness of harvesting areas and lack of transport – could consume up to 50% of their already meagre income from harvesting. To its credit, MET took cognisance of these objections and, with input from a National Stakeholders Workshop held in November 1999, redesigned the system to address at least the most pressing of problems. The current policy is quoted verbatim below:

“The objective of this policy is to outline a control mechanism, which will allow the Ministry of Environment and Tourism to closely monitor the utilisation of *Harpagophytum*; to ensure that sustainable harvesting methods are used and to collect better information on the dynamics of the *Harpagophytum* trade.

It is proposed that:

1. A harvesting season for *Harpagophytum spp.* from March to October be declared. No permits will be issued outside these seasons.
2. Harvesting will be subject to a permit which:
 - a. will be valid for the whole harvesting season;
 - b. will not be transferable;
 - c. will require the prior permission of the landowner (in case of communal areas, this may be the traditional authority and/or the representative of the regional and local government);
 - d. may be issued to an individual, or a group, but the number and names of persons who will harvest must be specified on the application, and stamped copies of the permit will be provided for each harvester;
 - e. permits will be valid for a particular locality only. MET reserves the option to set a quota on any particular permit issued;
 - f. each person harvesting must be in possession of a valid permit (or valid copy thereof);
 - g. will stipulate that sustainable harvesting methods be used;
 - h. each permit holder will be required to submit a report-back on the number of bags or total weight (kg) harvested, and to whom such bags were sold, and on which dates, by the end of November of each year;

- i. new permits will only be issued on receipt of the report back from the previous permit, and confirmation that sustainable harvesting techniques were complied with.
3. Persons dealing (purchasing, transporting, selling, exporting, importing) in *Harpagophytum* must be registered annually with MET, and will be required to keep a register of all transactions, including permit numbers of persons from whom material was bought, with clear distinction between the two species of *Harpagophytum*. A dealer will be required to complete the details of transactions with harvesters on the harvesters' report back form, and to sign accordingly.
4. Permits issued by MET will still be required for the export of *Harpagophytum*, and applications for export must be accompanied by copies of the register showing clearly where the material originated. Permits will be issued separately for the two species.
5. Permits will be required for cultivation or research on *Harpagophytum*. In this case, cultivation will be defined as the cultivation of *Harpagophytum* for commercial purposes. Feasibility studies into cultivation will be regarded as research, and applications must therefore be submitted as such. Application forms can be obtained from the Specialist Research component, Division: Specialist Support Services, Windhoek.
6. Phytosanitary certificates will still be required from the MAWRD for export of *Harpagophytum*. These certificates will only be issued upon production of a valid MET export permit and valid import permit or authorisation by country of destination/import.
7. Projects involving the value addition of *Harpagophytum* will be supported and encouraged, in the interest of national development.

The two main concessions to harvesters that were agreed at the Stakeholders Workshop were that permits would be valid for the whole season (originally they were to be for one month only) and that permits could be issued to groups (which allowed organised groups of harvesters to share the cost of obtaining permits and reporting back on their harvesting). SHDC played a key role in securing these essential changes, specifically by helping to organise the national workshop, organising a preparatory workshop for harvesters, and facilitating the attendance of harvesters' representatives at the national workshop. Without the project it is unlikely that the harvesters would have been able to access the proper channels to make themselves heard (they had not been consulted before permits were reintroduced).

The workshop also resulted in the formation of the national Devil's Claw Working Group (see 1.1 above).

6.3 Constraints

Despite the positive results achieved by SHDC, there are still many constraints to securing better benefit-sharing deals for Namibian Devil's Claw harvesters:

- The land tenure situation is not clear in most harvesting areas – in most cases the land belongs to the State and is controlled by civil servants or traditional authorities, making it difficult for harvesters to enforce good management practices.
- Legislation to regulate access to genetic resources has been drafted but not enacted – this has left the door open for commercial interests who have been collecting Namibian Devil’s Claw to use in propagation trials, without any arrangement to share benefits.
- Virtually all harvesters are very poorly educated and therefore unable to follow the convoluted debate about benefit-sharing, or to negotiate a good deal without assistance.
- Many harvesters still lack the most basic information about prices and marketing channels for their Devil’s Claw, leaving them at the mercy of exploitative middlemen and exporters.
- The only IPRs over Devil’s Claw that are formally recognised are the patents⁴⁹, brand names⁵⁰, trade marks and trade secrets held by processors.
- Traditional Devil’s Claw users have been dispossessed of their resource rights in four distinct phases – firstly through conquest by in-migrating Bantu-speaking groups, secondly by German colonisation, thirdly by South African occupation and apartheid resettlement, and finally by physically and economically more powerful cattle owners who have established themselves in harvesting areas.
- Despite a few concessions to marginalised harvesters, administrative procedures continue to favour literate people with access to transport, and many San harvesters complain of informal ethnic discrimination by civil servants who are supposed to help them comply with regulations.
- The (mainly European) importers, processors and wholesalers of Devil’s Claw are absolutely unwilling to share information about their costs and profits, making it impossible to judge the exact share of benefits accruing to each role player in the production and marketing chain (but giving rise to a general belief in Namibia that foreigners take by far the largest share and are unwilling to be open because they know very well how unfair their profits actually are).
- For most Namibian role players Devil’s Claw is their main – or at least a very important additional – source of income, while for most importers it is only one of many resources in which they trade; this obviously puts Namibians in a disadvantageous position in negotiations, and allows importers to dictate the terms of trade.
- To date (despite some encouraging noises from certain quarters) no foreign processors have been willing to invest in adding value to Devil’s Claw inside Namibia, preferring instead to maintain the iniquitous and exploitative trade in raw materials which so typically characterises trade between developed and developing nations.
- Poverty forces harvesters to accept bad prices, especially when money is required urgently – diversified livelihood options and alternative sources of income would help to empower them against unscrupulous buyers.

7. *Impact on conservation*

In its project areas SHDC has already had a significant impact on the conservation of Devil’s Claw, and possibly on the wider conservation of biological diversity. In the first place this was achieved by recognising and legitimising traditional knowledge about sustainable harvesting, and extending a best practices message based on traditional knowledge to those harvesters who did not have such knowledge (because they were too young or were not from a traditional harvesting background).

⁴⁹ For example, WO9744051 by H. Finzelberg’s Nachfolger (Germany), US5,888,514 by Bernard Weisman (US), WO9734565 by Willmar Schwabe (Germany), US5,929,038 by Choongwae Pharmaceutical (South Korea), UK Application GB2335919 by Essential Nutrition Ltd (UK).

⁵⁰ For example, Arthrosetten (Brenner-Efeka, Germany), Algophytum (Herbaxt, France), Jurcurba (Strathmann, Germany), Harpagoforte Asmedic (Dykerhoff, Germany), Harpadol (Arkopharma, France), Fitokey-Arpagophytum (Inkeysa, Spain), Doloteffin (Ardeypharm, Germany), and Pagosid (Salus/Duenner, Germany).

Equally important, by securing a better price for harvesters SHDC has provided them with a long-term incentive to implement sustainable harvesting techniques, and to take control of the management of the resource.

The conservation impact has not only been in the form of improved protection (through sustainable utilisation) of an economically important species at local level, but has also (potentially) prevented, or at least slowed, genetic erosion by increasing the survival of individual plants, which can now or later be included in screening programmes aimed at identifying desirable traits. Ironically, this second type of conservation might ultimately work against the interests of the very people responsible for conserving the genetic diversity of the Devil's Claw population.

There are indications that the improved benefit-sharing, and the local organisational and institutional empowerment of harvesters, achieved by SHDC potentially have a wider impact on the ecosystem in project areas. Specifically, the harvesters' groups have been identified as grassroots focal points for interventions to commercialise other natural products from the area, and for efforts to increase cultivation of semi-wild drought-resistant crops.

The conservation impacts of SHDC on Devil's Claw are assessed on an annual basis through ecological surveys⁵¹, and are also subject to ongoing participatory research.

8. *Lesson learned and replicability*

8.1 **Lessons learned**

The predominant model of benefit-sharing under the CBD is that of a large corporate bioprospector paying an indigenous community or, more often, a national government in cash or kind for the right to evaluate systematically its biodiversity for new and potentially lucrative uses, usually with a small share of the profit on successful developments, and sometimes some technical capacity-building, thrown in. This approach excludes many communities with valuable biological resources and thus substantially reduces the desired impacts of the Convention in its key objectives of conservation, sustainable use and especially equity. No wonder that critics of the CBD have accused it of being little more than an instrument to legitimise the developed world's expropriation of valuable genetic materials occurring in developing countries – 'biodiversity for sale'⁵².

Despite its limited scale and scope, SHDC demonstrates that it is possible to use benefit-sharing as a tool even in cases where resources have long been commercialised and the market is effectively controlled by outsiders. By providing traditional harvesters with some very simple institutional and organisational assistance, they can be put in a position where they derive substantial additional benefits from their resources, and thus have additional incentives to conserve those resources and use them sustainably.

The case of Devil's Claw further demonstrates that intellectual property rights over innovative and new uses are not the only biodiversity benefits available for sharing. There are very real, and potentially very long-term, benefits to be had from the successful domestication and cultivation of Devil's Claw. That research into this is being funded by large international development agencies without any apparent concern for the holders of traditional knowledge, and is being conducted in a way that is extremely unlikely to benefit those traditional users, further demonstrates that not all

⁵¹ See Strohbach 1998 and 1999a; Carr 1999

⁵² Hammond *et al.* 2000

bio-pirates are large corporations, and that even those who should know better actually have scant regard for the provisions of the CBD.

On the other hand, SHDC also demonstrates that the cooperation of commercial partners from the developed world is not an absolute prerequisite for sharing benefits with primary producers. It is possible to achieve more equity at a national level simply by organising rural producers so that they are better able to negotiate a good deal with their richer compatriots, who are in control of secondary trade. However, since the final buyers in the North hold most of the power, such increased benefits are precarious and ultimately any concerted pressure on exporters will be passed on to harvesters, to take it or leave it – and with their limited options they will be forced to take it.

Another lesson that can be learned from SHDC is that the European phyto-pharmaceutical industry is not prepared to reveal how much profit it makes off the backs of extremely poor people. This is most likely because the companies involved realise how bad this will look to the more progressive sectors of their customer base.

Seen from a contrary angle, this represents a real opportunity for harvesters to secure a better deal, provided that they can present sound, well-founded arguments backed up by solid facts to justify their claims for a better share of the cake. The growth of ethical consumerism in developed countries is therefore a potential negotiating tool for producers in developing countries. More specifically, it should be acknowledged that the main profit centre in the global economy is brand-name recognition and the associated customer loyalty. For this reason it is theoretically in the long-term interests of both harvesters and pharmaceutical companies to create a firm public link between a specific brand and ethical, equitable practices at the point of origin. Regarding Devil's Claw there are encouraging signs that at least some of the more progressive buyers are beginning to realise the value of such a partnership, and talks are underway to do turn it into a reality that benefits primary producers.

In the absence of any analysis of the profit chain from the time that Devil's Claw arrives in a European port until it disappears down a consumer's throat, it is hard to be exact about the extent of the inequality prevailing at present. However, for most Devil's Claw harvesters the only things that could be worse would be if consumers were to stop using the product (e.g. as a result of the proposed CITES listing), or if the trade were to be monopolised by commercial growers.

Conversely, the best-case scenario for Namibian Devil's Claw harvesters would be the development of a low-input, semi-wild cultivation method that can be used to increase populations under the severe agricultural constraints imposed by the plant's natural environment, and the consequent development of a viable and profitable local processing industry in which they had an equity interest.

8.2 Transferability

This case study on Devil's Claw in Namibia could be considered representative of countless other resources harvested by extremely poor people in developing countries for the benefit of rich processors and consumers in the developed world, especially those commercialised before the CBD was negotiated. In most of these cases, harvesters could be assisted to obtain a better share of the benefits (and thus be motivated to support conservation and sustainable use) by:

- Helping harvesters to organise themselves at a local level so that they can manage their resources sustainably

- Clarifying land and resource tenure so that harvesters have a firm basis from which to plan and implement sustainable management
- Facilitating more equitable partnerships between primary producers and other stakeholders in the trade and industry, preferably globally, but failing that at a national level
- Providing harvesters with more information on the fair value of their product in the market, to protect them from exploitative trade practices
- Linking specific groups of harvesters to a specific brand that promotes itself on the basis of its fair and equitable treatment of primary producers who use environmentally sound harvesting practices

The CBD concedes the principle that improved benefit-sharing can foster conservation, sustainable use and equity. It is now up to the primary resource managers of the world (and their service organisations) to convince users that this principle should, in all fairness, be applied in all cases where genetic resources identified through traditional knowledge are commercialised. At the very least, consumers in developed countries should insist that their pharmaceutical industries protect and promote the interests of the people responsible for ensuring the survival of the resource.

8.3 Advice for implementation

In conclusion, the authors would like to offer the following recommendations for consideration by policy makers and industry:

- Do help harvesters to get organised at local level – disorganised and isolated harvesters are far more likely to resort to unsustainable harvesting out of desperation.
- Do create positive links between sustainable resource management and better prices – use organic certification and/or fair-trade practices to access ethical consumers.
- Do not look to cultivation as an alternative source of supply without considering the impacts on the livelihoods of extremely poor people. If cultivation is seen as the only option, make sure that it is practical for traditional harvesters, not just for rich farmers, and provide traditional harvesters with technical and financial support so that they can make use of the opportunity.
- Do not propose that resources be protected by listing them on CITES as a mere precautionary measure, without suggesting viable alternatives for the harvesters who rely on them for an income.
- Do not assume that just because a resource naturally occurs in one nation, it can be developed without considering the impacts on harvesters in neighbouring countries.
- Good policy and/or legislation are not enough – support to marginalised peoples, relevant and useful information, and ‘honest brokers’ are also needed.
- The transaction costs of benefit-sharing have to be kept low to allow more spending on actual benefits. This can be achieved by involving the largest possible number of harvesters and spreading the costs over the largest possible number of resources.

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