The hoo-ha about Hoodia in South Africa

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The Hoodia plant is a relatively unspectacular succulent of the genus Hoodia, of which a number of species are indigenous to Southern Africa. Were it not for the fact that the plant contains certain chemicals that appear to act as appetite suppressants, the Hoodia cactus would be of little interest to anyone other than botanists. However, it appears that the San people have knowledge of the appetite suppressant properties of the plant and have used it for this purpose. Exactly how long they have been aware of these properties is unknown. Attempts to commercialise the appetite suppressant properties of Hoodia have placed the plant at the centre of a philosophical debate around the development of indigenous genetic resources and traditional knowledge.

In 1997, the South African Council for Scientific and Industrial Research (CSIR) filed a patent application relating to the Hoodia plant at the South African Patent Office. The application was entitled "Pharmaceutical compositions having appetite suppressant activity". This application was later completed and a number of corresponding foreign patent applications were filed. On the face of it, the CSIR appears to have acted in an exemplary manner. It is reported that the CSIR awarded a licence to the UK-based company Phytopharm plc to exploit the CSIR intellectual property. Phytopharm has proceeded on a programme for the development of an appetite suppressant drug. For its part, the CSIR is reported to have signed a benefit-sharing agreement with the San Council and the San people have apparently already received substantial benefits arising from the agreement with the CSIR. Why is it, then, that issues surrounding the exploitation of Hoodia resurface from time to time in the news media and in academic debate?

South Africa is a signatory to the Convention on Biological Diversity. The Convention was established in 1992 and is intended to deal with a broad range of environmental issues. The Convention also deals with the protection of "traditional knowledge". A debate – the protagonists to which are the developed countries on one side and the developing countries on the other – revolves around the protection of indigenous biological resources and traditional knowledge, and the compensation of the developing countries or their indigenous peoples for the use and exploitation of these biological resources and traditional knowledge. Prominent on the side of the developing countries are Brazil, India, South Africa and some of the Southeast Asian countries.

In compliance with its obligations under the Convention, South Africa promulgated the South African National Environmental Management: Biodiversity Act 10 of 2004. The act came into force in 2004 and contains definitions of "indigenous biological resources". It provides that in order to engage in bio-prospecting in South Africa, one must obtain a permit from the state. The permit will be issued only if consent to a benefit-sharing agreement is obtained from the person or community providing access to the indigenous biological resources. If traditional knowledge is associated with the indigenous biological resource, a benefit-sharing agreement must also be entered into with the traditional knowledge holders. Consent must be based on full disclosure of all relevant information, including the intended use of the indigenous biological resource. However, regulations to the Biodiversity Act have not yet been promulgated, leaving certain of its provisions inoperative. In order to further ensure the achievement of the objectives of the

Biodiversity Act, amendments to the Patents Act were promulgated by way of the Patents Amendment Act 20 of 2005. This act inserts into the Patents Act definitions of "genetic resource", "indigenous biological resource", "traditional knowledge" and "traditional use". The act requires every applicant for a patent to lodge a statement stating whether the invention for which protection is claimed is based on or derived from an indigenous biological resource, genetic resource or traditional knowledge or use. If so, the Registrar of Patents must require the applicant to furnish proof as to his or her title or authority to make use of these resources or knowledge. The making of a false statement or representation which is material and which the patentee knew or should reasonably have known to be false is a ground for revocation of the patent.

Some insight into the arguments at issue may be obtained by looking at the actual patent applications relating to the Hoodia plant filed by the CSIR. The specification of the US patent (US 6,376,657) reveals that the claims of the patent (ie, the section of the patent that determines the scope of protection) are directed to an extract from a plant of the genus Trichocaulon or of the genus Hoodia which comprises an appetite suppressant agent having a complex chemical formula, which is specified in the claim. Various other independent claims all include complicated chemical formulae or processes. The claims of the corresponding South African patent specification are somewhat different and, in addition to claims directed to complex chemical compositions and processes, include, for example, claims directed to simple processes for the extraction of an appetite suppressing agent from the Hoodia plant. However, if such claims are anticipated by the agents or processes used by the San, then they are invalid in terms of the ordinary patent law. To the extent that the CSIR attempted to claim a monopoly in the Hoodia plant or the traditional knowledge used in practice by the San, its patents are invalid. To the extent that these patents protect inventions that relate to the Hoodia plant, but are not simply regurgitations of information that was commonly known and used by the San, these inventions may be patentable and one would want them to qualify for patent protection, since this is probably the only way in which the San may obtain any commercial benefit from their traditional knowledge.

In developing drugs, the pharmaceutical industry must comply with rigorous standards set down by various agencies throughout the world. In order to do so, the drugs must be tested and shown to be safe for human or animal use. This process is extremely time consuming and very expensive. Further, in order to commercialise a pharmaceutical product, it is necessary to be able to identify and extract the active ingredient and, preferably, to synthesise that ingredient. This process is currently underway in respect of the Hoodia appetite suppressant composition and, at least in this example, what is clear is that the idea that the large pharmaceutical companies are simply stealing inventions from indigenous peoples is a misrepresentation of the facts. In all probability, the lead given to the CSIR researchers by the information provided by the San people in relation to their use of the Hoodia plant was of considerable value; but the process of developing a safe, commercially reproducible and effective drug based on that information probably required considerable inventive skill and effort, not to mention funding.

In any event, one may well ask whether the whole project for the protection of genetic resources and traditional knowledge is not misguided. Two aims seem to be detectable in the arguments put forward by the developing nations. First, there is an attempt to establish repositories of knowledge containing information about traditional knowledge and indigenous biological resources. The aim is to prevent monopolisation of this knowledge by way of patents filed by non-indigenous persons (particularly by bio-pirates in the developed world). There is nothing obviously wrong with this. However, the fact that an invention has been known and used is sufficient to invalidate any attempt to monopolise the invention by way of patent protection in most countries of the world, whether or not such knowledge or use is documented in the manner proposed. The accumulation of this knowledge and its provision in a readily accessible format merely make access to information easier.

Second, there is an attempt to obtain compensation for the use of indigenous biological resources and traditional knowledge in the development of new inventions, particularly pharmaceuticals. Again, in principle, there is nothing wrong with this. However, the devil is in the detail. What, for example, is the San Council? Does it represent all of the San people and does the money derived from the benefit-sharing

agreement with the CSIR reach all of the San people? The San people are distributed quite widely over South Africa, Namibia and Botswana. Which of these groups of people actually benefit? What is the value of the actual information provided by the indigenous people? For example, in the Hoodia case, to what extent is the CSIR's invention, as contained in its 1997 patent applications, the result of information obtained from the indigenous people? In this regard, it is interesting to note that in 2000, a South African patent application was filed by Phytopharm plc relating to pharmaceutical compositions containing an extract obtainable from the genus Trichocaulon or Hoodia having an anti-diabetic activity. Was it part of the traditional knowledge of the San people that the Hoodia plant was effective against diabetes?

Many similar questions arise in relation to attempts to protect indigenous biological resources or traditional knowledge. However, perhaps the most important question is one which is not being asked: why is it that developing nations such as South Africa are unable to commercialise inventions based on their own biological resources and traditional knowledge? South Africa's recent history of successful innovation is poor. The government realises this and has attempted to put in place projects for the promotion and financing of technological innovation and development, but these have a very long way to go and, measured by the number of local patents filed at the South African Patent Office by national applicants, South Africa is falling further and further behind in its technological development. Perhaps the time and effort spent on attempting to protect such things as indigenous biological resources and traditional knowledge would be better spent on the promotion of innovation in South Africa.

Frank Joffe specialises in the drafting of patent specifications (mechanical and related technologies and e-commerce and computer-related inventions); the filing and prosecution of local and foreign patent applications; the filing and prosecution of local and foreign registered design applications; litigation in patent, registered design, copyright and unlawful competition matters; the drafting of licence agreements, technology transfer agreements, know-how and joint venture agreements and research and development agreements; and IP due diligence investigations. Mr Joffe lectured in various departments at the University of the Witwatersrand. He also spent some time in the business world as an executive director of a public company.

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