

The Kenyan Wildlife Service



From the Coalition Against Biopiracy's Captain Hook Awards for Biopiracy:

Nominee: Genencor et al.

Category: Murkiest Case of Biopiracy

For taking, patenting, cloning and selling “extremophile” microorganisms collected from lakes in Kenya. In the late 1980s, scientists connected to Leicester University (UK) collected microorganisms living in the hot geysers of two of Kenya’s lakes. The organisms produce enzymes that were found to be great fabric softeners and “faders” – giving fabrics a stone-washed appearance popular with consumers. By 1995, the microorganisms were in the hands of Dutch company Royal Gist-Brocades, and were passed on to US company Genencor when it bought the Dutch company in 1995. Genencor patented them and then began producing them (through cloning) on an industrial scale. Genencor, since bought by Denmark-based Danisco (2005), sells them to detergent manufacturers and textile companies. The Kenyan Wildlife Service maintains that the collectors never had the proper permits to take the microorganisms for commercial use in the first place. To make matters murkier, the Kenyan researcher who proposed the original bioprospecting expedition so that she could write a dissertation on the topic of extremophiles living in Kenya’s lakes – she was a Ph.D. student at the time and is now a professor of Botany in Kenya – suspects that her supervisors at Leicester University took the samples without her knowledge. She cannot recall anyone asking her permission to use them. It seems that her UK supervisors conducted clandestine research on the samples, discovered their commercially useful properties and then sold them.

Article from The EastAfrican by John Mbaria, August 23, 2004:

KWS Seeks Millions From Procter & Gamble

The action could put a halt to illegal extraction of Kenya's biological resources, particularly those with huge industrial potential

The Kenya Wildlife Service (KWS) is seeking a share of the hundreds of millions of dollars generated from the sales of a popular detergent and a bleaching agent manufactured in the US whose active ingredients were acquired in Kenya illegally.

With assistance from scientists at the International Centre of Insect Physiology and Ecology (Icipe), KWS has launched a claim for a share of the proceeds accruing to the US multinational giant Procter & Gamble and to Genencor International BV of the Netherlands with respect to the sales of Tide Alternative Bleach Detergent and "stonewashing" material.

According to information made available to *The EastAfrican*, Genencor was the company that discovered "extremophiles" (tiny organisms that are able to survive and thrive in extreme environmental conditions) in Kenya, cloned and later sold them to Procter & Gamble, which used them as critical ingredients in the manufacture of the detergent.

With research and genetic manipulation, scientists have not only isolated extremophiles in such extreme environments as hot springs and geysers, but have also reproduced billions of their clones in laboratories (see separate story).

The claim by KWS is significant for Kenya not only because of the sheer amount of money involved, but also because it could put a halt to the illegal extraction of the country's biological resources, particularly the illegal traffic in tiny organisms with huge industrial potential.

According to the Deputy Director in-charge of Research and Development, Dr Richard Bagine, KWS has officially written to lawyers working for Public Interest Intellectual Property Advisors (PIIPA) in the US to handle the matter on its behalf.

However, Dr Bagine said that at this early stage, KWS had not worked out what amount of royalties it will be asking for from the two companies.

"We hope to be guided by PIIPA lawyers, who are able to trace the accounts of these two companies ever since they put up the relevant products in the international market."

In a letter to the founder of PIIPA, Michael Govin, the head of Bioprospecting and Molecular Biology at Icipe, Dr Wilber Lwande, wrote, "PIIPA could first pursue Genencor International and Procter & Gamble for royalties from this discovery and (later) from any other possible discoveries associated with (the) Kenyan samples."

PIIPA is an international not-for-profit organisation whose lawyer-members offer free legal advice to disadvantaged indigenous communities on matters related to the protection of intellectual property rights.

The EastAfrican has also established that KWS is partly banking on the provisions of the Convention on Biological Diversity (CBD), which not only affirms the sovereign rights of signatories over the biological resources found within their territories, but also commits parties to "fair, equitable sharing of the benefits accruing from the utilisation of genetic resources."

Following extensive investigation and interviews with scientists working for the World Wide Fund for Nature (WWF), ICIPE and KWS and with members of the Kalenjin community living around Lake Bogoria, *The EastAfrican* has obtained details of how the samples were collected and shipped out of Kenya.

According to Dr Lwande, the samples were initially collected from a number of alkaline lakes located on the bed of the Great Rift Valley – Bogoria, Magadi, Nakuru, Elementaita and Solai in Kenya, and Natron in Tanzania, in 1998. However, the only samples that yielded positive results were from the hot geysers of Lake Bogoria and along the shores of Lake Nakuru.

The research expedition, which surprisingly seemed to have escaped KWS's attention then, involved scientists from Leicester University in Britain.

"We have evidence to indicate that the samples from which the discovery was made were obtained by Dr William E. Grant of the Department of Microbiology and Immunology at the University of Leicester in the UK," Dr Lwande said.

It is also clear that Dr Grant did not work alone but was in a group of scientists who, though they went ahead to publish their results in the *Extremophile Journal* of the UK in 1998, did not have any authorisation from KWS.

"We do not have records showing that the scientists had notified KWS nor any indication that they had acquired a research permit from the Ministry of Education before embarking on the sampling," said Dr Bagine, who added that although the Education Ministry is normally mandated to issue such permits, KWS is empowered to vet proposals made by researchers working in Kenya's protected areas.

It has also emerged that the group of Leicester University scientists was accompanied by an employee of Genencor, Brian Jones.

"After samples were collected from Lake Bogoria, Brian Jones of Genencor International purchased the samples from Dr Grant and made an enzyme discovery that Genencor later sold to Procter & Gamble," Dr Lwande said. He added that the particular enzyme was then used as a critical ingredient in the (manufacture) of Tide Alternative Bleach detergent."

What remains mysterious, though, is who, probably within KWS or the Baringo County Council – which manages the Lake Bogoria National Reserve together with the Koibatek County Council – had given the researchers protection. Attempts by *The EastAfrican* to get the names of the local officials involved did not yield results.

Dr Lwande said that he alerted members of the former KWS board close to three years ago over the matter, "but for whatever reason the board did not take any action."

The KWS board was then headed by a former attorney general, Charles Njonjo, who was deputised by Dr Richard Leakey.

Procter & Gamble was established as a soap and candle company by the Americans William Procter and James Gamble in 1837. Though the two started it as a family business after being prompted by their common father-in law – they had married sisters, Olivia and Elizabeth Norris – it has grown over the past 167 years to become a \$38 billion outfit as of March 31 this year. Its more than 300 products have a consumer base of about five billion people worldwide and are on sale in 140 countries.

And although the company launched the original Tide detergent in 1946, it has over the years come up with a host of brands bearing the name Tide. A statement posted on its website, www.Pg.com, says that Tide has remained its flagship, retaining its popularity because of its "superior" washing quality and "innovations" that have helped it to remain the company's single largest brand.

For its part, Genencor International Inc is a biotechnology company with an annual turnover of \$380 million. It has offices in California and New York in the US and in the town of Leiden in the Netherlands.

In a number of annual reports, Genencor has stated that its scientists discovered the extremophile from which they developed an easy-to-use enzyme that can treat denim (jeans) to create the popular "stonewash" look, in Kenya.

A message posted on its website, www.genencor.com, reads, "In 1998, we commercialised an extremophile enzyme, *Puradax cellulase*, derived from a new *Bacillus* species found in the Rift Valley soda lakes of East Africa." It adds that Genencor had also introduced *Indiagen neutra*, an enzyme derived from a bacterium that was isolated from the soda mud flats on the shores of the highly alkaline Lake Nakuru in Kenya.

In addition, its 2000 Annual Report says, "To find the enzymes that flourish in alkaline environments, like your Saturday wash water, and enzymes that give your jeans a softer feel and a stonewashed look, we looked for them, that's right, in the soda lakes of Kenya."

The two companies have a long-standing commercial relationship that was strengthened after signing a \$600 million five-year supply contract.

According to a statement he made during the launch of Genencor's 2000 Annual Report, the vice president in charge of research and development at Procter, Dr Nahil Sakkah, said this relationship had resulted in "Genencor delivering innovative biotechnology-based solutions to Procter & Gamble for over 18 years."

But although the two multibillion dollar companies have been patting each other on the shoulder over this evidently mutually-beneficial partnership, the people of Kenya – and

particularly the community living around Lake Bogoria – have not seen a single cent from the millions of dollar generated from the sales of these products.

During a visit to Lake Bogoria last week, a former councillor for Kipkuikui Ward, Samuel Kipket, told *The EastAfrican* that as true owners of Lake Bogoria, the local community has never benefited from the many researches going on there: "We are not even told of the nature of the researches conducted by foreigners."

The manager of the WWF-Lake Bogoria Community Based Wetlands Project, Fabian Musila, said, "A lot of research activities have taken place here but apart from reading the findings in international journals, none of the findings are ever communicated to authorities in Kenya."

He however blames this on lack of an effective research policy that would allow for the monitoring and assessment of the importance such research has to the country and its people.

Mr Musila further said that, in the past two years, Lake Bogoria has hosted numerous researchers from Ruetigart University in the US, the Darwin Initiative, Earthwatch International, University of Japan, University of Arizona and Leicester University.

From the Public Interest Intellectual Property Advisors' website, www.piipa.org:

PIIPA (Public Interest Intellectual Property Advisors, Inc.) is an international non-profit organization that makes intellectual property counsel available for developing countries and public interest organizations who seek to promote health, agriculture, biodiversity, science, culture, and the environment. PIIPA has three main activities:

1. expanding a worldwide network of IP professional volunteers (the IP Corps);
2. operating a processing center where assistance seekers can apply to find individual volunteers or teams who can provide advice and representation as a public service (free or pro bono); and
3. building a resource center with information for professionals and those seeking assistance.

What we do

What can PIIPA's IP Corps do to help?

PIIPA is building a network linking people who need help with IP professionals who can represent them. This establishes a framework for action. PIIPA's global approach can be scaled up as needed and ensures that IP professional resources are the right size, available at the right time, and in the right place

PIIPA's IP Corps can take the following specific types of actions for developing country organizations:

- file patent applications
- file trademark application
- attack and invalidate patents
- attack and invalidate trademark registrations
- search and analyze patent portfolios to determine freedom to operate
- negotiate bioprospecting access and benefit sharing agreements
- negotiate agreements providing access to medicine
- counsel governments on legislative initiatives involving IP protection, e.g. genetic resources, traditional knowledge, and access to medicine
- help governments and NGOs involved in treaty negotiation
- litigate patent and trademark infringement and compulsory license cases

These are unique services not provided by other organizations working on capacity building and training.

Sectors

Biodiversity

In 1992, the United Nations Conference on Environment and Development convened in Rio de Janeiro and created two international agreements -- the climate change framework, and the Convention on Biological Diversity. Generally, the CBD “established sovereign national rights over biological resources and committed member countries to conserve them, develop them sustainably, and share the benefits resulting from their use.” Although the CBD has now been signed by at least 168 countries, significant debate surrounded its passage and still plagues the implementation of the CBD today.

Over the centuries, many samples of unique genetic resources have been taken from their original country of origin to collections in industrialized nations. Many unique biological resources have yet to be catalogued or even discovered. These resources, which are concentrated in developing countries of high biodiversity, remain in demand as sources of leads for new products, or for scientific collections. This demand has led many biodiversity-rich developing countries to exercise their rights over biological resources established by the CBD by enacting national laws and rules to protect their resources. The extension of developing country national laws to require informed consent and benefit sharing as preconditions to access to biological resources has resulted in contractual arrangements between biodiversity source countries and biotechnology and pharmaceutical corporations seeking access to the biological resources. These agreements are variously referred to as either biodiversity prospecting agreements or access and benefit sharing agreements.

While this national legislation relating to biological resources and biodiversity prospecting agreements is intended to protect these countries’ rights to their biological resources, it has also added new legal complexities with which developing countries must cope. Intellectual property experts have not been extensively involved in the establishment of such rules, with the result that they are of limited practicality.

Developing countries, therefore, have a need for professional legal advice regarding the passage and implementation of effective laws, the formation and execution of appropriate biodiversity prospecting agreements, and also their enforcement in the event of a breach. Countries may also require assistance to enforce permitting laws in the event that a company engages in biopiracy – the taking of biological resources without the requisite permissions and agreements.

While some biodiversity prospecting agreements may be fairly straightforward contracts, many provide negotiated royalty payments in exchange for access and sample collection, and other agreements involve complex negotiations regarding the sharing and value of locally-acquired and/or pre-existing indigenous knowledge regarding a developing country's biological resources. Source countries may place a high value on these contracts in monetary, environmental, and political terms. Thus, ensuring that such countries have legal representation that can adequately and appropriately handle the intellectual property issues that arise in the context of biodiversity prospecting agreements, such as licenses for patent, trademark, and trade secret/ know-how rights, and material transfer agreements, is crucial.