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Gene Hunters, Patent Prospectors, Medical Experimenters, Leave Indigenous Communities in Pacific Feeling Besieged, Betrayed

***Book Catalogues Unethical Research, Gene Theft in Pacific Countries;
Locally-Enacted Life Patent Bans Among Recommendations***

The Pacific region has experienced some of the world's worst examples of unethical bio-research and patenting of genes by international companies, according to a new book launched by co-publishers Call of the Earth Llamado de la Tierra, and the United Nations University.

The unique flora, fauna and peoples of the small island nations scattered across the South Pacific have attracted legions of tourists but also hoards of genetic and biomedical researchers. Pacific Islander's DNA and plants relied upon for millennia have been patented without permission. Bizarre human-animal hybrid transgenic experiments have been conducted and one biomedical experiment nearly turned the tiny Cook Islands into a "rogue state" in the eyes of the US government, according to the book.

"Researchers are harvesting and patenting the Pacific region's genetic resources by simply gathering and taking ownership over almost everything in their path," says Aroha Mead, Senior Lecturer at Victoria University, Wellington, New Zealand, and co-editor of the book, *Pacific Genes and Life Patents*, launched at the university March 20.

An absence of regulation and widespread naiveté regarding the latest genetic technologies and intellectual patent law has made the region a major target for commercial 'gene' hunters or bio-prospectors, she says, likening gene pirates to the oceans' bottom feeders.

"In South Pacific cultures a plant is a living ancestor – and even a drop of human blood retains its life spirit after it has been collected for medical research or synthesized and specific DNA

qualities isolated," says A.H. Zakri, Director of the United Nations University's Yokohama-based Institute of Advanced Studies. "The authors chronicle many actions over the years by the scientific and private sector communities that offend these deeply-held values. We hope this book helps advance international understanding."

According to contributor Te Tika Mataiapo - Dorice Reid, a traditional Chief from the Cook Islands: "Genes are a key resource of the new world bio-economy and our isolation and diversity makes the Pacific Islands particularly attractive." The modern bio-economy crashes head on with traditional cultural and spiritual values in the South Pacific, she adds.

"Plants and animals are not seen as mere physical or biological entities but also as embodiment of ancestral spirits," says co-editor Steven Ratuva of Fiji, a senior fellow at the University of the South Pacific.

Tribal Genes for Sale: \$216

One of the earliest offences involved the US government, which filed patents on DNA cells taken from the Hagahai tribe in Papua New Guinea and the Solomon Islands in the early 1990's. Neither the individuals, their communities nor governments were informed; the US government rejected their later objections as inconsequential. Hagahai T cells can be purchased today from American Type Culture Collection for \$216.

According to the book, even if individuals had consented, the genetic material donated would reflect an entire extended family's genetic makeup and their permission would be needed as well.

Patents have also been taken out on extracts from many plants Islanders have used for thousands of years, including Kava, Taro, Canarium Nut and others.

"Patents are not a tool of humanitarian research. They are a tool of commerce and exclusive property rights and serve to give signals to others "stay away, they're mine. I own them'," Mead writes.

Such action violates Islanders' traditional values of "pono" and "tika" (to act appropriately), where everyone benefits from the use of a plant, including individuals, their families, and communities.

Pig Cell Guinea Pigs

The South Pacific's beautiful and remote Cook Islands nearly became the site for the world's first transplantation of pig cells into living humans (xenotransplantation) as a cure for diabetes in 2002.

Pacific Islanders in general suffer from very high rates of Type-2 diabetes, and some researchers claimed transplanting pancreas cells from pigs into diabetics offered a potential cure. The New Zealand government had banned such xenotransplants as too risky in 2001.

Had the experiments gone forward, the US might have branded the Cook Islands and its 14,000 inhabitants a "rogue nation," writes Cook Islands' Traditional Chief Te Tika Mataiapo - Dorice Reid. Panicked US government health officials threatened to bar admission into the US of anyone from the islands as potential carriers of dangerous retroviruses from the pig cells.

After initially agreeing to the xenotransplants in 2002, the Cook Islands' government reversed its decision after protests from tribal leaders like Reid and the world medical community.

The Cook Islands and Pacific Island states generally have great difficulty staying abreast of developments in biotechnology and developing legislation to cope with social, legal, and ethical implications of the new technologies, says Reid.

The proposed pig cell transplantation episode illustrates that "some companies are willing to take advantage of this lack of capacity and absence of regulation," she says.

Maori and Human-Cow Hybrids

Another experiment, this time in New Zealand in 2002, involved genetically engineering dairy cows with human cells. Scientists hoped to produce therapeutic proteins in the hybrid cows. The local tribal Maori, who view themselves as guardians of the land where the New Zealand government's AgResearch agency experimental facility was located protested that this would cause a spiritual imbalance within the community. All living things have their own "whakapapa" – a genealogical descent from the gods to the present time. Mixing human and animal cells violates that natural order.

"Is it animan or manimal?" one Maori wondered.

In Fijian cosmology the genetic materials that make up plants and animals are considered part of the circle of life and are sacrosanct. Medicinal plants are considered common property and available for everyone. Fijian culture considers "life and the sustenance of life shared responsibilities unhindered by legal or political restrictions," says Ratuva. "Fijian cultural identity, land resources and cosmology are intertwined in a continuous cycle."

Recognition of the local people's worldview, even if they appear absurd to outsiders, must be part of the process in working out any patent or bio-prospecting agreements says Ratuva.

The Genographic Project: We already know where we come from

Indigenous world views have also clashed with the US \$40-million Genographic Project.

Launched in 2005 by National Geographic and IBM, it is a five-year study of genetic anthropology -- mapping historical human migration by collecting 100,000 blood samples from indigenous people. The project quickly ran into opposition from indigenous groups. "We know our creation stories and we know who our ancestors are," writes Le`a Malia Kanehe, a Native Hawaiian lawyer from Honolulu, USA, and Legal Analyst for the Indigenous Peoples Council on Biocolonialism.

Moreover such scientific research may have an impact on the rights of Indigenous peoples such as land rights should the Project suggest that some native groups are "recent immigrants".

Another scientific proposal to patent and license the Hawaiian genome as the intellectual property of the Hawaiian people was also rejected even though it might be worth hundreds of millions of dollars. Roche Pharmaceuticals paid US \$200 million for the rights to the Icelandic genome. Cultural leaders of the Kanaka Maoli (native Hawaiian people) consider their human genetic material "sacred and inalienable," writes Kanehe.

"These are not research questions driven by Indigenous peoples of the Pacific."

Genetics and biotechnology are not going to solve the fundamental problems facing the Pacific Region says Mead. "Climate change, waste management, regional security, over-fishing through illegal fishing and bottom trawling, continue to threaten the Region's resources."

However, misappropriation of Pacific cultural and natural heritage through life patents, is making matters worse she said.

Solutions: A Regional Pacific Intellectual Property Office and a Ban on Life Patents

Among the book's recommendation is a Regional Pacific Intellectual Property Office to assess patent and trademark applications, informed by Pacific model laws and responses. Such an office could enable patent application assessments to be carried out in a more critical manner with regard to Pacific cultural heritage.

Equally important is the enactment by Pacific states of laws that eliminate or significantly reduce patents on life. While this might contravene existing international patent agreements where nearly anything is patentable, growing sectors of society around the world believe patents are out of control.

"Furthermore, it is evident, that patent bottom trawlers will not self-regulate," says Mead.

"The Pacific has a greater purpose than to educate the world in bad practice in genetics and intellectual property."

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Call of the Earth Llamado de la Tierra

Call of the Earth, Llamado de la Tierra is a global initiative on indigenous intellectual property policy hosted at UNU-IAS. The projects brings together leading indigenous experts in cultural and intellectual property from around the world, among other things, to develop responses at local, national, regional and international levels to policy and legal developments that adversely impact on indigenous peoples traditions of preserving their cultural heritage for future generations.