

‘LAND-GRABS, BIO-PIRACY AND THE INVERSION OF JUSTICE IN COLOMBIA’

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Abstract

The possibility of commercially exploiting plant, animal and human genetic resources unlocked by biotechnology, has given rise to a wide range of cultural, environmental, ethical and economic conflicts. While supporters describe this activity as bio-prospecting, critics refer to it as bio-piracy. According to this latter view, international legal agreements and treaties have disregarded opposition and legalized the possibility of appropriating genetic resources and their derivative products through the use of patents. The legal framework that permits the appropriation of natural genetic products in Colombia also criminalizes aspects of traditional ways of life and enables a legally approved but socially harmful land-grabbing process. The article describes these processes and impact in terms of the inversion of justice and the erosion of environmental sustainability.

Keywords: Bio-piracy, bio-prospecting, land-grabs, environmental justice, Colombia, Green Criminology.

“Capitalism is a production method that favors the market over life and the human being itself”

Colombian peasant during the peace process dialogues.

Introduction

Cleveland and Murray (1997: 477) observe that ‘Our world system is rapidly becoming more interconnected, and no natural, cultural, or technological resources are only “local” resources any longer.’ Increased demand for resources both fuels and reflects processes of globalization and associated increases in consumption, conflicts over access, environmental degradation and erosion of human rights. In this context, ‘resources that have previously enjoyed somewhat separate existences in indigenous and industrial worlds’ no longer do so (ibid). Genetic materials derived from cultivated crops and from wild plant life are prime examples of local resources that have become globally commercialized and are taken from their location of origin and transformed into patented products of western laboratory science, plant breeding and molecular manipulation. The legal protection of these commercial products rests on international legal agreements and treaties (e.g. WTO/GATT, NAFTA) that rarely incorporate acknowledgement of the important historical selection, domestication and cultivation of plants by both indigenous farmers and the process of nature (Cleveland and Murray, 1997: 477). However, the direction of travel is not simply one-way. Genetically re-engineered, patented and legally protected bio-products such as seeds and plants are exported, sold or traded, back into the agrarian economies of origin countries or into new markets.

The exploitation of plant, animal and human genetic resources produces competing sets of economic, cultural and knowledge interests and claims. Under contemporary conditions of globalisation, corporate operations enjoy the legal and financial benefits of trans-national mobility and can also manipulate the application of international trade and property law. Such law has developed in recent decades in ways that have powerfully reshaped the basis of traditionally held rights and challenged indigenous concepts and cosmologies of ‘nature’ (whether identified with non-human living matter or natural resources or human beings themselves). Knowledge becomes intellectual ‘property’ in a process that has been described as bio-prospecting or bio-piracy. With a few exceptions – discussed below - this is an under-researched subject within criminology.

In this article we describe and analyse the macro bio-piracy process that is currently taking place in Colombia and that is facilitating the appropriation and commercialisation of various ‘products’ of biodiversity. As an illustration, the introduction of ‘seed laws’ in

Colombia will be examined to show how public policies and a legal framework have prioritized the interests of those who benefit from profit in the new bio-technology market over those who wish to preserve a traditional way of life. In the first section we provide a discussion of context, summarize the existing criminological literature on bio-piracy and show how this article contributes to it. In the second section we outline the methods and sources used to gather data. In the third section we describe the context of impoverishment in Colombia prior to the implementation of the seed laws and in the fourth section, describe the framework that has legalized the privatization of traditional goods and products, showing how each of the related laws has affected the lives and practices of the peasants, Afro-descendants and indigenous peoples of Colombia. The fifth section describes the outcomes of the implementation of these laws. Here we argue, first, that the theft of traditional knowledge and products has been made possible because communities had already been impoverished and marginalized by the prior theft of land, leaving them unable to fight against the seed laws; and second, that we can identify a 'vicious circle of biopiracy' in which the theft of traditional knowledge and products goes hand in hand with the take-over or theft of land and the imposition of changes to farming methods and practices. Finally, we conclude by discussing this phenomenon in terms of justice, arguing that, based on the definition adopted, the seed laws in Colombia represent an inversion of justice.

Background

In the early 1990s, the World Trade Organisation oversaw the introduction of an international Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). As McCoy (2005: 48) notes, this has been described as a 'charter for the protection of northern knowledge-based industries that want to strengthen their grip on the global control of knowledge'. TRIPS and other laws have extended patent coverage into the realm of ownership and commercial control of DNA, molecular life, cells and other elements of biology and genetics. This control is enforced by law and relaxed only in return for profit and royalties. At stake is the right to extract value and profit from biodiversity, natural and human resources, remaking 'the natural' into products for commercial markets. As used by indigenous peoples these natural products may be central to traditional, cultural and

cosmological systems. The original users of these resources may face a double injustice. First, where biotechnology, laws and market forces impose a monopoly on farmers such as with the supply of seed, simultaneously eliminating both the usual need, as well as the legal right, to cultivate the original plant, thereby depriving local populations of a source of income and a source of seed that they control (Tsioumanis et al. , 2003: 608). Second, where farmers and workers are excluded from any, or a fair, share in the benefits arising from the new product, due to ownership and benefit now transferring to the holder of the patent.

The global context in which this set of laws has been implemented has been one of crisis in economic systems, pressures on food and energy supplies, the rise of productivity in China and India, and the related extension of overseas import and purchase strategies to include intensive monoculture and 'land grabbing'. Directly affecting Latin America this has translated into a manifold growth in demand for Latin America's resources and export of raw materials from minerals to timber to food. In turn, this has had major impacts on rural landscapes and ways of life, leading Almeyra (2012, in Ramirez-Miranda, 2014: 124) to describe four key processes – likened to the 'Four Horsemen of the Apocalypse in the Latin American rural framework': large-scale migration and farmland abandonment; environmental damage and plundering caused by large mining industries; diversion and massive use of water due to large dam engineering required for mega-capital projects; and – the topic of particular interest here – 'the globalization of monoculture agribusiness.' Ramirez-Miranda (2014: 124) describes the proto-typical development of the latter as the creation, by trans-national seed-technology and food-production corporations, of 'green deserts' for the sole production of, for example, soy, timber or bio-fuel crops which have led to the loss of food sovereignty in Latin American nations (see also Mol, 2013). In turn, the intensification of agriculture to increase crop yield is accompanied by more intensive use of pesticides, with associated damaging impacts on wider eco-systems. This imposition of 'superior' scientific techniques and technologies inevitably produces conflict with traditional knowledge but also, as Sillitoe (1998: 227) remarks, reflects a common 'ethnocentrism' which finds it difficult to 'admit that [other] ways of managing resources are sometimes more appropriate and environmentally sustainable ... and that development

should be a two-way process. Alarming rates of environmental pollution, the squandering of resources, feelings of social alienation, etc., underline the limitations of applied science.'

The appropriation of knowledge and nature, usually from the 'South' to the 'North', has been termed 'bio-piracy' to describe the ongoing global and local corporate practice of asserting the right of ownership over genetic materials taken from living organisms (Mgbeoji, 2006), including the patenting of medicines, seeds, plants and even more developed forms of life. The opposing description of the process would be 'bio-prospecting', justified by supporters on the basis that public health, biotechnology research, new product development and successful businesses all benefit from this kind of investigation and exploitation. According to this argument, discoveries need to be protected by strong international patent laws otherwise substantial research investments might be lost. Furthermore, when traditional knowledge has potential but is not well served by weak intellectual property regimes or an absence of commercial models, then others have to step in. A similar view of the beneficial effects of bio-prospecting, intensification of land use and commodification of nature is extended by some conservationists who argue that corporate behaviour may be more easily regulated for the benefit of the environment than the behaviour of indigenous farmers or land users (Butler, 2014, Eisner, 1990). To some commentators this will sound naive and at odds with the findings of studies detailing corporate disregard for the environment, (Boekhout van Solinge, 2010, Mol, 2013) which is occurring alongside the imposition of unfair monopolies of trade based on patents.

The assertion of ownership of nature underpins the over-exploitation of the earth and its resources and this has begun to attract some attention in criminology via the reappraisal of traditional notions of crimes, injurious behaviours and social harms caused by the activities of transnational corporations and governments. A more environmentally aware or 'green' criminology is now developing with some work paying attention to the impact of corporate bio-agriculture and the exploitation of food production.

Walters (2004) pioneered work in this general area by reviewing a New Zealand report on genetic modification and examining the social, economic, and ecological risks of genetically modified foods. In this analysis Walters explained how corporations seeking to 'manipulate and monopolize world trade in the food industry' (Walters, 2004: 162) had denied or tried to portray as minimal any risk carried by genetically modified (GM) seeds.

In this discursive manoeuvre only expert knowledge produced by scientists allied with the industry was considered valid, whereas public opinion or 'traditional knowledge' was discarded as non-scientific and thus invalid evidence. Subsequently, Walters (2006) presented a case study of Zambia in order to consider the ways in which bio-technology-led agricultural monopolies collude with governments to control food markets. He showed how in the name of humanitarian aid to confront an alleged food shortage, the US government tried to impose genetically modified grains on Zambia. The aim was to create dependence on GM seeds and fertilizers by using the 'terminator' properties (see below) of the GM grains. Strategies used to pursue this imposition of GM seeds ranged from discursive attacks, to international pressure from the UN Food and Agriculture Organization (FAO), to cutting the aid given to Zambia by the US Agency for International Development (USAID). However, these and other strategies implemented by the biggest food corporations (Monsanto, Syngenta, Du Pont and Bayern), resulted in a backlash with GM food facing strong opposition from consumers (Walters, 2006: 35). In later work, Walters (2011) broadened the analysis of cultural, ecological, economic, political, and social concerns regarding genetically modified foods and emphasised the role and influence that lobbyists for food corporations have had on governments, successfully encouraging them to pass favourable laws and shaping the official discourse around GM food, all assisted by the corporate takeover of media outlets which are able to sympathetically manipulate the information the public receive. For Walters, a key issue is that environmental laws are weak compared to the power of trade agreements. In essence, Walter's argument is that 'GM food has little to do with feeding people and much to do with corporate power and profit' (Walters, 2011: 6).

South (2007) has written on corporate bio-piracy and the process by which the transnational mobility of corporations facilitates the transfer of knowledge and rights from their indigenous origins to legally protected, private and profit-oriented intellectual property monopolisers and Wyatt (2015) has added to this literature with a critical update to the bio-piracy / bio-prospecting debate through the study of two examples of injury caused by the 'invisible harm' of bio-piracy. Wyatt suggests that products derived from bio-piracy fall into two categories: horticulture and medicine; and that the strategy employed by 'bio-pirates' to render their harms invisible is supported in three ways: first, they benefit from

the legal status that trade treaties bestow on their activities; second, they use the legitimacy provided by the western scientific discourse of the need for 'progress'; and, third, they shape media messages to portray themselves as stewards of 'traditional knowledge'. According to Wyatt, the invisibility of the harms produced by bio-piracy is increased by the remoteness of the locations where bio-piracy occurs, the marginalization of the victims and the lack of academic work on the issue.

Wolf (2007) describes this process as the reduction of bio-diversity to bio-monopolisation and refers, in particular, to the 'biotechnological process of genetic manipulation called "terminator"', which prevents plant seeds from reproducing, providing the patent holder with legal and commercial 'control and intellectual domain over the seeds DNA.' For Wolf, privatizing nature is the expected result of the development of capitalism into monopoly capitalism - 'the stage in capitalism where all industries are controlled by a few producers acting in concert to maximize profits through cornered markets' (Wolf, 2007: 5). Global trade groups and supportive governments argue that such technology is good for development-aid projects and reflects the efficiency of the private market because patent protection incentivizes bio-tech companies to produce new and hardier plant hybrid varieties. However, what accompanies this is a dual injustice of theft and criminalization. The monopolisation of plant and seed DNA is imposed and legally enforceable based on patent law, and this, as Wolf points out, leads to the 'criminalization of replanting crop seeds'. Here Wolf draws upon Shiva's analysis of this trend as comparable to a form of colonial rule and neo-imperialism in which

A new and clever system has been put in place which is once again making the theft of the harvest a right and the keeping of harvest a crime. Hidden behind complex free-trade treaties are innovative ways to steal nature's harvest, the harvest of the seed, and the harvest of nutrition. (Shiva, 2000: 6).

This article aims to build upon these existing contributions and advance criminological discussion of biopiracy by describing recent strategies implemented by corporations with the help of governments to gain property rights over natural products. We describe how biopiracy is swiftly changing from micro-biopiracy (stealing 'seed by seed')

to macro-biopiracy (managing the theft of ownership of ‘all seeds at once’). In this process, environmental law is not only weak in fighting trade treaties but is often co-opted and becomes part of them. This description also illuminates links between biopiracy and land-grabbing and, in turn, shows that biopiracy and the imposition of GM agricultural technologies are related to wider influences and changes.

These developments have gathered momentum although not without at least some challenges being raised. Many representatives of those affected have argued in the forums of the World Trade Organisation and elsewhere, that allowing the patenting of the seeds of staple food crops has serious implications for the human rights, environmental sustainability and food security of indigenous communities. For example, in the past, the African Group has argued that a review of the Agreement on Trade-Related Aspects of Intellectual Property Rights should make clear ‘that plants and animals as well as microorganisms and all other living organisms and their parts cannot be patented and that natural processes that produce plants, animals and other living organisms should also not be patentable’ (Action-Aid, 2002: 2). However, legal force now underpins and allows actions that can be seen as threatening to food security, environmental sustainability and human rights. A western-led, neo-liberal market model has refashioned and replicated the colonialist legalisation and enforcement of exploitation. For criminology, this makes the subject one that demands adoption of a harm perspective (see e.g. Hillyard et al. , 2004) as much as one focused on legality and criminality. As White has argued ‘harm and injustice co-exist within the context of injurious social relationships that perpetuate wrongness’ (White, 2013: 21) and for our purposes here, harm can be seen as one outcome of the inversion of justice and defined as the stifling or diminishing of dignity, self-determination and independence.

Methods

During the second half of 2012 and the beginning of 2013, Colombian media ran stories such as ‘The laws that privatize and control the use of seeds are coming’ (Semillas) and ‘Rice growers are broke due to the acts of corporations’ (Radio-Guatapurí). At the same time, very visible demonstrations against bio-piracy - and related issues - (described

below) were taking place in the country. Both were taken as indications that aggressive and innovative developments in bio-agriculture were taking place but were also being questioned and criticised. This was the starting point for this research into the dynamics of bio-piracy in Colombia.

The research approach was primarily qualitative, supported by analysis of official reports, protest literature and media sources. An important element of the data was gathered during the forums that the Colombian Government, in the context of peace dialogs with the FARC-EP, arranged in order to be supplied with inputs and proposals derived from citizen participation, intended as contributions to discussion of items on the agenda for ending the conflict and building a stable and long lasting peace. The negotiating parties asked the United Nations and the National University of Colombia to arrange forums with representatives from across the country to discuss the agreement. The data drawn on here arises from attendance at 4 forums in Bogotá and San José del Guaviare, between December 2012 to August 2013. In total, these forums were attended by 4244 people from 19 community-based organizations. Those attending represented peasants' organizations, indigenous peoples' organizations, women's organizations, victims' organizations, raizales organizations, youth organizations, Afro-descendants' organizations, human rights activists, gay communities, churches, scholars, environmental activists, labour unions, private entrepreneurs, peace organizations, political parties, universities, community associations and experts on drug issues.(PNUD, 2012, PNUD, 2013a, PNUD, 2013b, PNUD, 2013c).

For purposes of definition, it is important to note that peasants are those individuals who find themselves caught between traditional rural arrangements and the changing nature of modern culture, and who are struggling to retain a productive role in the new market chain (Navarrete, 2011). The term raizales is a self-referencing concept used by indigenous people living in the Archipelago of San Andrés, with the intention of recognizing themselves as a distinct aborigine population and to reassert their right of self-determination over both their territory and their practices (Valencia, 2014). The term Afro-descendant is used to designate black people and highlight their identity as a group that has historically suffered and fought against racism. In this sense the term Afro-Colombians is used to denominate the broad Afro-descendant ethnic group present in Colombia (Pulido

Londoño, 2011). Indigenous peoples are understood as those who retain their identities as Aborigines, as distinct from the non-indigenous (mainly white) population (Bossi, 2011). Here the terms Aborigine and indigenous peoples are both used.

The forums were organized according to a formula somewhat similar to the consensus conferences (Fischer, 2003). Developed by the Danish Board of Technology, the consensus conference is a method for attempting to integrate 'expert knowledge' with 'common knowledge', involving the widest range of citizens possible (i.e., citizens from different geographic regions and different social, economic and political groups). Such a process stimulates public discussion of the matters at stake and helps ensure that decision-makers at the negotiating table are provided with the most comprehensive information possible. This method usually begins by selecting participants who are familiar with the matter to be discussed. Later, a steering committee narrows the topic to be discussed and outlines the rules of the discussion; the idea is that every participant has the flexibility and freedom to define the topic through his/her own approach. The official conference begins with a panel of experts presenting their scientific account of the discussion theme to the participants at the conference, with the objective of providing ideas for subsequent debate. The participants are then encouraged to give their own opinions regarding the subject of interest. Based on the experts' accounts and participants' statements, a report is prepared, which reflects the range of views, concerns and interests expressed at the conference. Finally, the report is presented to the attendees and sent to the decision-makers (Rodríguez Goyes, 2015).

As engagement with controversial environmental issues is a risky activity in Latin America (in 2014, Global Witness ranked Colombia second in a list reporting the number of homicides of environmental activists, with 25 deaths), special care was taken to ensure ethical and safety guidelines were followed. As well as obtaining informed consent from informants, all information was anonymized.

Qualitative data was supplemented with statistical and media reports. Three main Colombian newspapers (El Tiempo, El Espectador and Revista Semana) were accessed daily from September 2013 to November 2014, and searched for news related to seed law or land-grab issues. During these 14 months a database containing 776 news reports was built (meaning more than one relevant news report was published per day).

Context: Pre-biopiracy impoverishment

Well before the implementation of the legal framework imposing a new system of macro-bio-piracy, many other factors had already led to the impoverishment and marginalization of peasant, Afro-descendant and indigenous populations in Colombia. These included the takeover of land which left communities with nowhere to follow their agricultural, spiritual, cultural and social practices, thus making them dependent on government support and western development initiatives and investments for their maintenance and survival. This process has been taking place over decades but has accelerated since the 1990s. For example, whereas in 1984 89.92% of land was taken up by small farms, in 1996 91.11% was composed of large farms (Machado, 2004). Up to 2001¹, 0.4% of the population owned 61.2% of all registered land in Colombia (Bergsmo et al. , 2010), and 75.7% of land was owned by 13.6% of the population (the Gini index of concentration of land ownership in 2000 was 0.853) (Ibañez and Muñoz, 2011).

Historically, the takeover of land has been of two kinds: legal and illegal (CNRR, 2009). In the case of *legal* takeover of land, the law is followed but this does not always mean that such takeovers are just or unaccompanied by harm. Aborigine populations may be forced to sell or give up their land due to structural pressures, becoming landless impoverished communities. The implementation of new regulations plays an important role in this process (CNRR, 2009). This will be expanded upon below but for now we note that the one principal means of legal takeover of land is through foreclosure by banks in cases where Aborigine farmers have become bankrupt.

The takeover of land is also accomplished by *illegal* methods. Since the beginning of the current Colombian internal armed conflicts between guerrillas and Government and Paramilitary forces (see Rodríguez Goyes, 2015), this has been the main method of land appropriation. The scale of this displacement is enormous: between 1958 and 2013, 5,700,000 people were evicted by force, meaning 8 million hectares - corresponding to 7% of the Colombian land area - has been illegally taken over by the guerrillas and by landlords

¹ We use data from a 2001 report on the concentration of ownership of rural land as this is the last report produced before the implementation of the seed laws.

who control the actions of paramilitary forces (GMH, 2013). The main methods through which this has occurred are: forced purchase against the will of those on the land; forced purchase with low remuneration; forced purchase with no remuneration; coerced 'voluntary' leaving of land due to threats to the community.

Even if the typology presented here is too brief or over-simplistic with regard to the great complexities inherent in the legal and illegal takeover of land, the main point should be evident - that it is the historically marginalized and impoverished communities that are most affected in a prejudicial manner, while the economically and politically stronger interests derive benefits. The consequence of this dynamic is the further marginalization and impoverishment of the victims.

Analysis: The seed laws

In Colombia, domestic law comes from many sources. The overall Colombian Political Constitution is regarded as the 'law of laws'; if a conflict arises between any law and the Constitution, the Constitution will always prevail². International treaties are also a primary source of law, as any signed and ratified treaty is considered to be part of the Constitution itself. At a lower level of law are the laws approved by the Colombian Congress (initiatives to promulgate a law may come from the Senate, the House of Representatives, the government, from public entities, High Courts or from popular initiative³). At the third level of domestic law are the decrees and resolutions promulgated by the executive branch, in order to make the laws effective and applicable.⁴ An auxiliary source of law is found in jurisprudence (High Court precedents). Lower levels of law are dependent on higher levels. Four laws constitute a framework that legalizes the privatization of traditional goods and products. Each of these laws has affected the lives and practices of the peasants, Afro-descendants and indigenous peoples of Colombia and these will be examined in turn.

² Article 4, Colombian Political Constitution (CPC).

³ Article 154 CPC.

⁴ Article 189 CPC.

Decree 4525 of 2005: the commercialization of Genetically Modified Organisms

Article two of this Decree allows the importation, export and use of GM organisms (GMOs) in the fields of agriculture, agro-industry, fishing, husbandry and forestry, dependent on the prior consent of environmental authorities. Article six accepts the use of GMOs for medical purposes and for nutrition. Article 16 states that in cases of risk, a committee will evaluate the risks posed by GMOs and take any measures required in order to fix, mitigate, or compensate for, the harms caused to human health, the environment or biodiversity. Article 17 clarifies that the burden of proof in risky cases lies with the complainant who is arguing that a GMO is harmful and not with the company selling or using it.

After this decree entered into force, thirteen GM crops were introduced in Colombia by a small number of multinational corporations and private Colombian bodies: cotton, corn (Monsanto), roses, carnations, wheat, soy, beet, rice (CIAT⁵), cassava/yucca (CIAT), cane (CENICANA⁶), pastures, coffee (FONTAGRO⁷), potato and chrysanthemums (Agro-bio, 2010, Schaper and Parada, 2001). Within 9 years of the implementation of this decree, 100,000 hectares were under cultivation with GMO seeds (Clive, 2013), representing 6.3% of the cultivatable lands of Colombia (TWB, 2014).

Criminal law: Article 306.

Article four of Law 1032 of 2006 modifies the criminal law by including in it article 306, which criminalizes (with a possible punishment of imprisonment from 4 to 8 years and a fine between 8,000 to 447,000 US dollars⁸) anyone who plants, commercializes or transports legally protected seeds without the permission of the owners of the intellectual

⁵ International Centre for Tropical Agriculture <http://ciat.cgiar.org/about-us>

⁶ Colombian Sugarcane Research Centre
http://www.cenicana.org/quienes_somos/index_eng.php

⁷ Regional Fund for Agricultural Technology
<http://www.fontagro.org/en/organizaciones/federación-nacional-de-cafeteros-fedecafe-bogotá-colombia>

⁸ For the sake of clarity and standardization, all monetary amounts were converted to US dollars. The exchange rate used was that of October 21th 2014. At such a rate US\$1= 2066 Colombian Pesos.

property (Cala Moya and Guerrero Osorio, 2010). Since its implementation in April 2013⁹, 102 cases have been brought to court concerning the illegal use and commercialization of seeds in just one of the thirty-two Colombian departments¹⁰, with 60% of the defendants found guilty (Fiscalía, 2013). This law exemplifies the way in which the Colombian criminal law and justice system protect dominant interests and hold the satisfaction of the needs of the poor and powerless to the basic minimum. This is occurring in two ways, first, by privileging the economic order over the right to food; and second because those affected by this law are the most impoverished and marginalized communities (namely peasants, indigenous peoples and Afro-descendants) inhabiting the countryside, cropping and engaging in small-scale farming. According to this law, the passive ‘victims’ of crime are actually the major transnational corporations (such as Monsanto and the CIAT).

Resolution 970 of 2010.

This regulation governs the production, import, export, commercialization and any other transfer (whether free or in exchange for other products or money), of sexual or asexual seeds of any gender and species, including seeds that have been created through conventional plant breeding, as well as produced by non-conventional methods such as genetic engineering.

Article seven states that anyone who wishes to transfer seeds must be registered with the Agricultural Colombian Institute as a seed producer/merchant. This process costs around 683 US dollars. In addition, if seed is to be commercialized but is already protected by intellectual property law, a fee for the right to commercialize the seed shall be paid to the owner. Article 18 establishes that all crops must be cultivated from seeds legally bought from authorized seed producers; if they are not, crops and products from them will be confiscated. To make sure that this requirement is met, farmers must present certification of the quantity of seeds bought and then proof of the amount of crop that has been produced from them. Any inconsistency will be punished by confiscation of the extra produce.

⁹ Latest available statistics.

¹⁰ Colombia is a unitary republic formed of 32 departments. Departments are country subdivisions that are granted a certain degree of autonomy.

Article 21 states that any person, juridical or natural, must at any time accept the inspection of goods and lands by official agents. If any seed or crop does not meet the requirements outlined, sanctions will be imposed (as established by Decree 1840 of 1994) which can include fines up to a maximum of 2 million US dollars and the prohibition of further farming.

In Colombia, the monthly minimum wage is 298 US dollars, and the per capita monthly income is 691 US dollars (Viana, 2014), however, 55% of the rural population is in a condition of poverty and receiving a monthly per capita income of around 102 US dollars (Portafolio.co, 2014). This means that for a rural person to be allowed to commercialize seeds would mean saving their *total* income for almost a seven month period. It would therefore be extremely challenging to obtain a permit to commercialize seeds and farmers are therefore obliged to buy. This law therefore allows seeds to be appropriated by corporations and criminalizes the use of any seed that has not been properly registered and certified by the authority thereby making the use of native seeds illegal. The traditional method of farming in which seeds were collected from previously sown and harvested crops or exchanged with other farmers is now criminalized. From 2010 to 2013, 167 tons of rice, potato, corn, wheat and beans were destroyed. In 2012, 2,792 tons of rice seeds were destroyed because they were not authorized for sale (Semillas, 2013).

Law 1518 of 2012: implementation in Colombia of the International Convention for the protection of new varieties of plants (UPOV 91¹¹).

This law is the means by which Colombia complies with one of the requirements of Free Trade Agreements signed with the U.S.A. and Europe. It introduces in Colombia, law relating to intellectual property over new varieties of plants, denominated as *plant breeders rights* (PBR) and discussed in the UPOV 91 treaty. For this intellectual property protection to be given, article 5 establishes that the variety must be new, distinct, homogenous and stable. Article 14 establishes that only through the holder of the intellectual property is anybody else allowed to produce, reproduce or sell protected seeds and derived crops.

¹¹ This convention is known as UPOV 91, as it was last revised by the International Union for the Protection of New Varieties of Plants (UPOV) on March 19, 1991.

Article 19 establishes the minimum duration of the PBR as 20 years. Article 2 of the convention establishes that each signatory must ensure the enforcement of the PBRs.

This treaty makes it possible to privatize the seeds of indigenous and peasant farmers when they can be shown to the UPOV to be new and recently discovered. Thus, Aboriginal communities will no longer be allowed to harvest and collect many of their traditionally used seeds that are now under the intellectual property protection of this law nor freely exchange them (Grupo-Semillas, 2010).

However, this particular law is not in force at present as the Colombian Constitutional Court annulled its implementation in 2012 because its approval had not involved any prior consultation with indigenous, peasant and Afro-descendant communities, as required under Colombian laws.

Taken altogether we argue that these laws mean that:

a. Even when seeds are a product of a centuries-old process of interaction between farmers and the natural environment in which innumerable farmers and other workers on the land have taken part, three of the laws reviewed allow the appropriation of any seed by corporations. As such, this constitutes what we call a macro-biopiracy process.

b. The exchange of seeds is no longer permitted thus putting a halt to the natural creation of new species. As such, the dynamic that made Colombia one of the two countries in the world with greatest biodiversity (Rangel-CH. et al. , 1996) has been truncated.

c. Food independence is denied, as communities are no longer free to crop any seed but only those they are allowed to purchase as commercial products. In this process, GMOs gain terrain at the expense of traditional crops and ways of life in Colombian society.

d. Given the material reality of Colombia, peasants, indigenous people and Afro-descendants are experiencing a process of exclusion from property and being criminalized while corporations are being encouraged and enabled to privatize common goods in ways protected by law. The legal framework and

public policies now in place therefore prioritize the market over traditional ways of life.

Discussion: The take-over or theft of land and the imposition of enforced changes to farming methods and practices.

Why was this process of macro-biopiracy allowed in Colombia? We argue that the theft of traditional knowledge and products has been made possible because communities had already been impoverished and marginalized by the prior theft of land (described earlier), leaving them unable to fight against the seed laws. This argument will be illustrated through a description of the agrarian strike of 2013 in which, even when the peasants attempted to oppose these laws by going on strike and halting their production, they were regarded at the national level of power as having little importance and their actions as being unable to affect the implementation of such laws.

We also use this case to illustrate what we call ‘the vicious circle of biopiracy’. By this we mean that although the concept of biopiracy has traditionally been understood only as the theft of traditional knowledge and products, it is necessary to also consider biopiracy in terms of the take-over or theft of land and the imposition of changes to farming methods and practices. Acquisition of agricultural land and ‘natural capital’ (Kareiva et al. , 2011) in developing countries by larger emerging economies such as China, Brazil and India and countries such as the Gulf States with large revenues to invest, has become a significant trend since around 2008 (Geary, 2012, Heinimann and Messerli, 2014). Such large scale investments have become, broadly termed, ‘land grabbing’ and typically involve deals between national governments as owners of land (on which traditionally small-scale farmers will often have had use-rights that are then over-turned) and transnational corporations and investors. The negative label of ‘land-grab’ is applied when such transactions ‘violate human rights, lack the participation and prior and informed consent of land users, and do not take into consideration social and environmental impact assessments’ (Geary, 2012, Heinimann and Messerli, 2014).

In the case of Latin-America, as Ramirez-Miranda (2014: 122) describes, from the latter part of the 19th century to the 1929 recession, rural economies and farming were

based on an export link with other global economies. However, subsequently, policies were implemented that were designed to support industrialization, with consequences that were often damaging to the traditional agricultural sector: 'Farmlands contributed money raised from agricultural exports in order to finance industrial machinery and equipment imports, produced cheap raw materials and surplus food that enabled the agricultural industry to work at low wages and consumables costs, provided a strong disciplined workforce, and consolidated an internal market of agricultural products.' However the Latin American debt crisis and recession of the 1980s provided the context in which economic constraints and neo-liberalism rose to the top of the policy agenda with consequences for the land-based economy which included 'the weakening of internal food production, the dissolution of the farm-household, and the deagriculturalization phenomenon' following 'trade liberalization and public expenditure reduction policies made with international financial institutions.'

Bio-piracy and land-grabbing are linked by inseparable dynamics in the sense that the theft of traditional knowledge and products of nature is only possible in previously (economically) impoverished and (spatially and culturally) marginalized communities. Once this has occurred, it becomes easier to take over land, whether through direct purchase or through the commercial and/or legal imposition of different farming methods. This creates a cycle of impoverishment and marginalization in which communities are powerless to prevent or fight the removal of ownership of their land and knowledge, leaving them dependent on externally imposed farming methods and bio-technology which is costly but cannot legally be substituted by other means. This leads to further impoverishment and marginalization and so the cycle continues. To understand biopiracy in this holistic fashion allows a better comprehension of its causes, characteristics and consequences (e.g. violation of food security, loss of biodiversity, and so on).

The 2013 agrarian strike

From August 19th to September 12th 2013, an agrarian strike took place in Colombia in protest at the difficulties of Aboriginal communities in meeting basic needs. Strikers from twelve of the thirty-two Colombian departments took part in the strike. More than two hundred thousand people blocked the main roads of twenty-seven departments.

Although different organizations were involved, their claims were similar. These groups were and are composed of peasants, Afro-descendants, indigenous populations and environmentalists. Their basic demand was for the structural transformation required to enable the satisfaction of their most basic human needs and rights.

To initiate negotiations with government authorities, the strikers presented an eight-point list of demands (MIA-Nacional, 2013). At the time, each point entailed a number of specific requests which represented the ideal hopes and aspirations of all the Aborigine populations. The following lists some of the specific requests that are particularly related to the issues here, with an explanation of their importance provided by ‘grass roots’ members of each organization:

The derogation of the laws that harm the small farmers’ production, transformation and commercialization activities, including those that cover the distribution and use of native and traditional seeds.

“We need to get our native seeds back because currently they only have benefits for transnational corporations. We have to reject transgenic seeds and protect native seeds. First, because it is the only way to strengthen our local economies; but also because these GM seeds produce big and shiny fruits, but our health is impaired: they give us cancer, diabetes and obesity” (farmer from the Colombian pacific); “they bring more harms than benefits; our local seeds bring only benefits” (peasant from Boyacá). “It is evident that the governmental commitment is with foreign companies and not with Colombian peasants: they criminalize national production, they make it difficult to commercialize our production under illegitimate laws, and they confiscate our food” (peasant from the Colombian Atlantic).

The provision of land for landless peasants, indigenous populations and Afro-descendants.

“We need to have access to land as it is the only way to secure our existence” (peasant from the Colombian Pacific) “The only way to practice the sovereignty for people proclaimed in the Constitution is to have the land back in indigenous, Afro-descendants or peasants hands” (aboriginal from the Putumayo).

Stopping the process by which more and more land is owned by foreigners and foreign companies.

“Bank debts make Aborigines lose their land; and the banks take that opportunity to expropriate the land and give it to multinational corporations” (aboriginal from the Putumayo).

Respect for the traditional agricultural practices of Afro-descendants and indigenous populations.

“Even when the Aborigines have built their own development system, one that prohibits the exploitation of non-renewable resources, during the last decades the government has imposed the corporatization of the land in order to implement agro-industrial practices as the only methods permitted. This is destroying familiar and traditional agriculture, which then leads to more and more land being owned by foreigners” (aboriginal from the Córdoba). “The capitalist production system prioritizes the market over life and human beings” (environmentalist). “The current agricultural dynamics mean that agriculture no longer accomplishes its task: to feed the people” (politician).

The outcome of the strike

As we have suggested, the process of agro-industry colonization and the bio-piracy that forms part of it, has made it easier to gain legal control of more and more land. In a context where international awareness has been raised about corporate and government perpetration of state illegalities and offences against human rights (Cohen, 2001) the illegal takeover of land could be subject to international disapproval or sanctions. However, by implementing laws that legalise ‘biopiracy’ it is possible to pursue this process through legally approved means and implement new methods of land takeover, namely the legally enforced change to farming methods.

On September 12th, after 120 hours of continuous negotiations, the leaders of the strike declared it was over, accepting an agreement that included 15 concessions.

Of particular importance are the following:

- The government promised to protect national agricultural production from competitors elsewhere in South America and other Andean countries.
- The government stated that they cannot protect national production from competition with products from the U.S.A or Europe, because they have already signed binding treaties. However, it promised to compensate for losses that this may represent, in four payments distributed over a two-year period.
- The government promised to promote national agricultural production and consumption by labelling domestic products as Colombian.
- The government promised to stop implementing Resolution 970 of 2010 that regulates seed exchange.

It is of importance to note that of all the demands made by the strikers, only two of these featured in the agreement reached: protection for national production, and the revoking of the seed laws. However, all of the above were or became problematic. The first of these hides the real threat to small-scale agricultural production in Colombia because even though it is important to protect Colombian national production from external competitors, other Andean and South American countries face similar difficulties (see e.g. Jeria and Bonilla Vallejo, 2014), with the main competitors being in Europe and the U.S.A. Second, a two-year ‘compensation’ scheme will not provide proper recompense for the significant losses that will lie ahead. Thirdly, promotion of home-produced goods by the government will not be able to compete with the advertising media campaigns carried out by multinational corporations. Finally, while the agreement by government to stop use of one of the seed laws was a promising outcome, it never actually occurred. On November 2, 2013, 70 tons of rice produced by small peasants was destroyed because their seeds were not bought from an authorized merchant. Rice farmers of many regions declared themselves bankrupt in January 2014 (Radio-Guatapurí, 2014).

A new strike began on April 28th, 2014, because the promises of 2013 were not honoured and the peasants, indigenous and Afro-descendant populations saw no improvement in their circumstances. This new strike attracted the attention and support of various journalists and academics who produced important analyses of the bias of the neo-liberalized market toward multi-national corporations. For example, fertilizers in Colombia (mandatory for farmers to use) are sold in Colombia at a price 50% higher than the

international average. 92% of the fertilizer market is controlled by Yara (Correa, 2013), a multinational corporate subsidiary of the Norwegian industrial firm Norsk Hydro. In addition, multinational mining corporations operate almost free of taxation. Through legal means, the government excused them from four of the key taxes that all other companies must pay (Redacción-Política, 2014). This is despite the fact that the activities of this industry have led to natural disasters such as the drought that killed 20,000 animals in the Colombian eastern plains (EFE, 2014).

After only 14 days, the 2014 strike ended with the only concessions from Government being to launch a ‘financial life guard’ by refinancing farmers’ debts (Tiempo, 2014). However, this time, not only were traditional farming practices criminalized but demonstrations as a form of democratic free expression, were also banned.

The technique of justification employed here was to link ordinary demonstrators with guerrillas. The National Minister of Defence wrote on his Twitter account that ‘the FARC-EP [Colombian Guerrillas] are distributing pamphlets to promote the strike’ (Redacción-Nacional, 2014). In response, one of the strike leaders, Óscar Gutiérrez stated ‘It is a lie that there is infiltration in the Strike, the Government just want to create confusion [...] they have our names, phone numbers and addresses [...] if they say that there are FARC infiltrators, then go ahead and capture them’ (Nación-Semana, 2014). Criminalization of demonstrators and of activists is a worrying omen given the Colombian experience of the high number of environmentalists who have been killed in recent years – 55 between 2002 and 2013 according to Global Witness (2014). In 2013, the agrarian strike left 12 people dead, 4 disappeared, 485 people injured, and 262 arbitrarily arrested, as a result of actions described by the strike leaders as ‘indiscriminate and disproportionate attacks by the Army, Police and the Mobile Riot Squad’ (MIA, 2013). In the 2014 strike, although the total number of injuries is unknown, up to the ninth day 120 people had been injured (AFP, 2014).

In spite of the efforts of indigenous peoples, Afro-descendants and peasants to challenge and change the newly imposed means of production and sale, opponents have not been able to make any real impact due to their marginalization and impoverishment, the result of processes of dispossession and land takeovers. Further post-bio-piracy impoverishment has rendered more land into even fewer hands; fewer peasants are engaged

in agriculture; more multinational corporations own the basis and output of national production.

Conclusion: The suppression of tradition, the take-over of land and the inversion of justice

The takeover of land in Colombia has been of two types:

a. *Purchase of lands from communities suffering further impoverishment.* As explained above, small farmers are declaring bankruptcy and land is being taken by the banks. All this has meant that the Gini index of concentration of land ownership has increased from 0.853 in 2000 to 0.891 in 2010. Similarly, whereas in 2005 the Gini index for employment in agriculture stood at 21.4% of total national employment, it had decreased to 16.9% by 2010. During this period, investment by foreign companies in production rose from 3,015,635,873.5 US dollars in 2004 to 16,771,705,211.6 in 2013, equivalent to a 550% growth in international participation in Colombian national industry¹².

b. *Imposition of enforced changes to farming methods.* Farmers who still own their lands, no longer control them. Because of the seed laws, farmers are obliged to sow and crop the legally approved seeds, and because of the market dynamics, they need to crop what can be sold. This has led to patterns of monoculture and extensive husbandry with the index of livestock production rising from 95 in 2004 to 115 in 2012, and the 'use of fertilizers' index increasing from 321 in 2004 to 744 in 2012. All of this means that less land is being used for crop production, fewer crops are being cultivated using traditional nutrients such as animal and plant manure, and more use is being made of industrial methods, as required by the agro-industry corporations.

¹² Information retrieved from <http://data.worldbank.org/?display=graph>, on October 30, 2014.

Certain kinds of land use can be criminogenic (Potter, 2014). In the case of Colombia (Rodríguez Goyes, 2015) we can see how bio-piracy processes help to deepen the conflict around land by aiding land-takeover through legalized methods. Indigenous peoples, Afro-descendants and peasants have been unable to stop the implementation of laws facilitating this because their state of marginalization and impoverishment has deprived them of oppositional strength. Both in law and in practice, the Colombian government has ensured that international market interests prevail over the needs of the general population. Thus, bio-piracy has inflamed land conflicts and consequently the impact of the harms that follow. A direct example would be the strikes and related riots arising from the seed laws.

The processes described are imposing and legitimating the inversion of fairness, rights and justice. First, justice is inverted by the way in which traditional knowledge is taken from its original owners and turned into patented and trademarked products and processes by international corporations through the mechanism of intellectual copyright laws. The paradox here lies in the simultaneity of the intense interest shown by private corporations in traditional knowledge, thereby clearly recognizing its significant value, while at the same time these corporations seek to diminish any value that might be attributed to traditional knowledge by indigenous communities and to deny their rights of ownership over this knowledge. Second, a form of imperialism is being reproduced which also generates environmental inequality. Drawing on Lewis (2012: 87), environmental injustice can be defined in terms of 'inequality or unfairness in the distribution of environmental burdens, where there is exclusion from the processes which determine how that distribution will be effected, or where disproportionate distribution is not balanced by sufficient reparation. This extends to potential injustices between developed and developing states, and between present and future generations.' In this way environmental justice and human rights can be seen as tied together and there is some expression of this in various international treaties, in some national laws and constitutions, in propositions that environmental rights should be seen *as* human rights and in cases where human rights regimes explicitly incorporate environmental rights for current and future generations (Gianolla, 2013, Hiskes, 2008). Skinnider (2013: 3) observes that 'There is a need for ... systems [of law and criminal justice] to function with certainty in order to be fair and

consistent.' The question is whether environmental injustice can be addressed within systems of criminal justice, regulation and law defined by the assumptions and interests of advanced western economies? In acknowledgement of this, some international measures, agreements and documents have sought to assert the importance of respect for long-established traditional knowledge and indigenous rights. On this basis, exploitative bio-piracy goes against the spirit of Agenda 21 of the 1993 UN Conference on Environment and Development and Article 8(j) of the Convention on Biological Diversity on in-situ conservation which expects that knowledge and innovations that arise from indigenous culture and practice should be respected and preserved, and that benefits that may follow from recognition or use should be equitably shared (Cleveland and Murray, 1997: 494). Macro-bio-piracy has inflicted the very opposite of these and similar principles, resulting in the destruction of community associativity and cultural practices and loss of eco-system health, bio-diversity and habitats of various non-human species.

These consequences lead us to describe the whole bio-piracy process in terms of the inversion of fairness and justice and the erosion of human rights and environmental sustainability. Regrettably, what has been occurring is not an illegal process but one based on public policy that supports both the take-over of land and the privatization of traditional knowledge. In the future, given the injustices introduced by neo-liberalism, a preferable path would be that public policies might now be re-directed in ways that remedy some of this injustice and that would 'strengthen peasant and indigenous agriculture so as to encourage rural development based on food sovereignty, democracy, fairness and sustainability' (Ramirez-Miranda, 2014: 123).

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