



BIO-PROSPECTING VS BIO-PIRACY

A discussion from an eco-justice
perspective.

A.k.a. Bioprospecting evaluated from an
eco-justice perspective

Contents

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1.a. Corn

- The first corn plantations are traced back to Mesoamerica, and its first appearance was 100.000 years ago.
- 338 patents exists over corn varieties.
- Monsanto developed the Bt. Corn (herbicide resistant).

(Grupo-Semillas, 2008)

1.b. The Colombian seed laws

- **Decree 4525 of 2005:** Article two of this Decree allows the importation, export, and use of GMOs in the fields of agriculture, agro-industry, fishing, husbandry, and forestry, dependent on the prior consent of environmental authorities.
- **Criminal law:** 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 dollars) anyone who plants, commercializes or transports legally protected seeds without the permission of the owners of the intellectual property.
- **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. Anyone who wishes to transfer seeds must be registered with the Agricultural Colombian Institute as a seed producer/merchant

(Rodriguez Goyes & South, Forthcoming)

2. THEORETICAL FRAMEWORK



GREEN CRIMINOLOGY

The framework that by using the background offered by criminology (Potter, 2010), studies the transgressions against ecosystems, humans and non-humans, produced in the interaction of the human beings and its natural surrounding (Mol, Forthcoming); having as goal to recognize, understand and prevent such harmful events (South, 2007).

2. a. Departs from a harm perspective

- Crime definitions found in the law, do not encompass all the social actions (Weber, 1997) that impair life. –See labelling approach; critical criminology; harm perspective-.
- Criminal law has a low representativeness in regards to the social actions that preclude wellbeing.
- Many of the most damaging social actions are not included in the criminal law. (Hillyard et al., 2004)

Exercise

How many have suffered?

- Robberies
- Rapes
- Homicides.
- Kidnappings

How many have suffered?

- Sickness because of pollution.
- Sickness because of bad nutrition.
- Sickness because of stress.
- Distress E.g. Vertigo (Young, 2012).

2.a.i What is harm?

- Injustice: The diminishing of potentials, which are stifled or prevented by systematic pressures and limits of the society as a whole ([White, 2013](#)).
- Harmful social events are so broad that instead of being enlisted, they need to be defined democratically by its victims.
- E.g. The poisoning of the lands.



Baby affected by glyphosate
aspersions in Ecuador

2.b. Develops a global analysis

- The risk society (Beck, 2006): (cultural, social or geographical) borders no longer protect us.
- Butterfly effect: the sensitive dependence on initial conditions in which a small change in one state of a deterministic nonlinear system can result in large differences in a later state
- It is important to gain interest in the many existing scales: local, national, regional, global and transnational.



Nagasaki bomb, Japan, 1945.

3. THE GLOBAL CONTEXT



To develop a global analysis

- The context does not exclusively deal with economic dynamics –“number crunching”-, but with symbolic issues as well (cultural, sociological, psychological, etc.) (Brisman & South, 2014)

“Modern research demands that every special branch shall dig in its own hole. It’s not usual for anyone to sort out what comes up out of the holes and try to put it together [...] it seemed to me, like doing a puzzle and only using the pieces of one’s own color”

(Heyerdahl, 1996)

3.a. The “exchange” of products

- Our world system is rapidly becoming more interconnected, and no natural, cultural, or technological resources are only local any longer (Cleveland & S., 1997). E.g. The super-seeds.
- Genetic materials derived from cultivated crops and sylvan life, are taken from their location and transformed into products of western laboratory science.

- Genetically re-engineered, patented and legally protected bio-products are exported back into the agrarian economies of origin countries or into new markets.



Chia, from Mexico and Guatemala



Fertilizer, from...

3.b. Land accumulation

- Acquisition of agricultural land and “natural capital” (Kareiva, Tallis, Ricketts, Daily, & Polasky, 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)

3.c. The legal framework

Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS).

“Property right: Ownership of ideas, including literary and artistic works (protected by copyright), inventions (protected by patents), signs for distinguishing goods of an enterprise (protected by trademarks) and other elements of industrial property”.

2.c.ii. Requisites for granting a patent

- Novel: No patent should exist on the same product.
- Non-obvious: It shall not be obvious to the experts in the matter. (Lawson, 2004)
- Industrial application: It must have a clear and possible practical use.
- Capacitating description: After following the instructions, anybody should be able to get the same result. (Gilbert & Walter, 2001)

“Article 28 Rights Conferred

1. *A patent shall confer on its owner the following exclusive rights:*
 - (a) *where the subject matter of a patent is a product, to prevent third parties not having the owner’s consent from the acts of: making, using, offering for sale, selling, or importing for these purposes that product;*
 - (b) *where the subject matter of a patent is a process, to prevent third parties not having the owner’s consent from the act of using the process, and from the acts of: using, offering for sale, selling, or importing for these purposes at least the product obtained directly by that process”.*

3.d Neo-colonialism

- Hierarchical imposition of truths (Foucault, 1991), practices and narratives. Ensured by control dynamics and seeking to generate dependence.
- ❖ *Some of the traits above described, could be included as effects of neo-colonialism.*

“[Neo]-Colonialism resides in reasons of political economy -the country’s semi peripheral condition- which does not mean that it manifests itself merely at the economic level. Quite the opposite, it manifests itself also at the social, political, juridical and cultural levels”

(de Sousa Santos, 2006, P. 147)

3.b.i. Scientific knowledge vs Traditional knowledge

- In modernity, the road of human progress is defined and hoarded by positivist science, technique and technology. Thus, positivist science interferes in all realms of life by imposing its rules and truths. (Hoyos Vásquez, 2006). From a modern point of view, progress is seen as a unitary process arrogated to positivist science and its technologies, which through the absorbent appropriation of all realms of life is supposed to lead towards human completion (Vattimo, 1998). (Rodríguez Goyes, 2015)

Positivism

- Ontology: Ingenuous realism
- Epistemology : Objective analysis
- Methodology : Scientific method.
- ✓ Observation
- ✓ Question
- ✓ Hypothesis
- ✓ Testing
- ✓ Conclusion

Traditional wisdom

“Wisdom is gained through a long process of collective knowledge, and by using myths, tales and rituals it is orally transmitted through generations . This is not a purely intellectual effort, but a holistic way of living. Knowledge is also practice, to learn by doing”

(Beltrán Barrera, 2011, p.22)

4. BIOPROSPECTING

“Prospecting: Search for future possibilities, Based on present clues”

Real Academia de la Lengua Española

4.a. Origins

- Due to a perceived rapid loss of species, In 1990, Thomas Eisner called for an increase in the search for chemical values found in nature, in order to prevent loosing chemical compounds that could be beneficial for the human being. He described it as “The exploratory process through which new, useful natural products are discovered” (Eisner, 1990)

4.b. Simple definition

*“Prospecting: Search for future possibilities,
Based on present clues”*

Real Academia de la Lengua Española

“The international search for genetic material and bioactive chemicals for use in medicine and other areas beneficial to mankind”.

(Schei, 2000)

- A simple definition is problematic, given that it disregards that every human action, is immersed in a complex context.

4.b.ii. Wide definition

“The research process done over biodiversity with the aim of developing marketable products; where the following processes take place: (i) systematical study of biological and genetic resources; (ii) transformation of the resource into a product; (iii) marketing in small or large scale; (iv) protection of the product through intellectual property”.

(Rodríguez Goyes, 2013)

4.c. Features

- Biotechnology is the tool by it used to transform nature in marketable products.
- Economic actuarial calculations come into play.
- IPRs are seen as an incentive to creativity
- Sciences and its technologies, are the main tools in the process of development.

4.e. Alleged benefits

- It helps the conservation of diversity by finding the “value” of it.
- It promotes the corporative sustainable use the components of the environment by taking only the genes that carry the value, and not the whole individual.
- Trough it new medicines for the human wellbeing are created.
- It makes possible the development of the global south:
 - It creates economic opportunity by sharing benefits from the eventual commercialization of products derived from the exploration.
 - It provides the opportunity for the scientist of developing countries, to develop their careers

4.f. Piracy

“Unauthorized copying of materials protected by intellectual property rights (such as copyright, trademarks, patents, geographical indications, etc.) for commercial purposes and unauthorized commercial dealing in copied materials”.

World Trade Organization

“Piracy: The theft or destruction of someone’s good”
Real Academia de la Lengua Española



5. BIO PIRACY

5.a. Origins

- The term was created by Rural Advancement Foundation International in 1994, as a response to the concern from pharmaceutical companies, about the loss of money produced by the Unauthorized copying of materials protected by intellectual property rights in the countries of the Global South ([Svarstad, 2000](#))

Debt if the contributions of Third World Peasants and tribespeople are taken into account. (Shiva, 1997)

Debtor/ Concept	Agricultural Royalties	Pharmaceutical Royalties
“Third-world” countries	USD\$202 Millions	USD\$2.5 Billion
Transnational corporation	USD\$302 Millions	USD\$2.7 Billion

5.b.i Mild definitions

- “Appropriation and monopolisation of long-held medicinal and agricultural knowledge about nature, as well as the related physical resources (plants, animals and their components). The ‘appropriation’ is the pillaging or theft of the knowledge without recognition of or compensation to the indigenous communities from which the knowledge was taken. The ‘monopolisation’, as will be demonstrated, is the exclusive ownership of the products created from that knowledge that is made possible because of the power of the corporations”.

(Wyatt, 2015)

5.b.ii Radical definitions

- Any appropriation of the natural products, their genetic codes or the knowledge to them associated.

5.c. The IPRs Myth

PATENT MYTH	REALITY
Novelty	Products patented are not ex-nihilo or individual creations; they depend on the creativity of nature, as well as on the work of peasants; thus, it is unfair to only praise the person who took a final step in a process that has taken place over millennia
Non-obvious	It is granted due to the western ignorance, of non-western knowledge
IPRs are seen as an incentive to creativity	Patents reduce creativity by increasing secrecy.

5.d. Symbolic harms

- The commodification of nature: Nature is not longer seen as intrinsically valuable, but as machine at our service. It reproduces the anthropocentric and androcentric logics. (Sollund, 2012)
- Reductionism: The belief that components of the universe can be isolated, and can work on their own –DNA-, ignoring the complexity of life.
- Critique of the marginalization of non-western knowledge systems, wrongly coined as traditional knowledge (Shiva, 1997). Through the use of law, the only validated knowledge is what is under the concept of western science
- Imposition of truths: It tell us how life should be lived. The myth of progress.

“Industry and government have apparently entered into an extra societal partnership, allegedly with the purpose of creating a sustainable economy. But where does this partnership leave the interests of civil society and the environment?”

(Myrup, 2012, p. 260)

“I didn’t have any need of going to the cinema, because my grandparents used to tell me tales, it was as being in a movie. My richness came from the culture, from the territory, from tradition, we didn’t need any of these new things”

Peasant from the Colombian Pacific Coast in
Mol, Forthcoming

5.e. Ecological harms

- Monocultures of species: by classifying how useful species are, the multiplying of some is favored, and consequently the disappearing of others.
- Further loss of biodiversity: When the genes are captured in a lab, the organism containing them appears to be dispensable.
- The consequences of modifying nature are not controlled, and however, GMOs are released
- Chemicals pesticides and fertilizers are offered and required the pollution of the environment increases.

“Most of the mega-biodiversity countries are developing countries, which could profit substantially in financial terms from their wealth in biodiversity.’ But translating ‘could’ into ‘will’ is the problem”.

(South, 2007)

“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 seeds produce big and shiny fruits, but our health is impaired: they give us cancer, diabetes and obesity”.

Colombian farmer

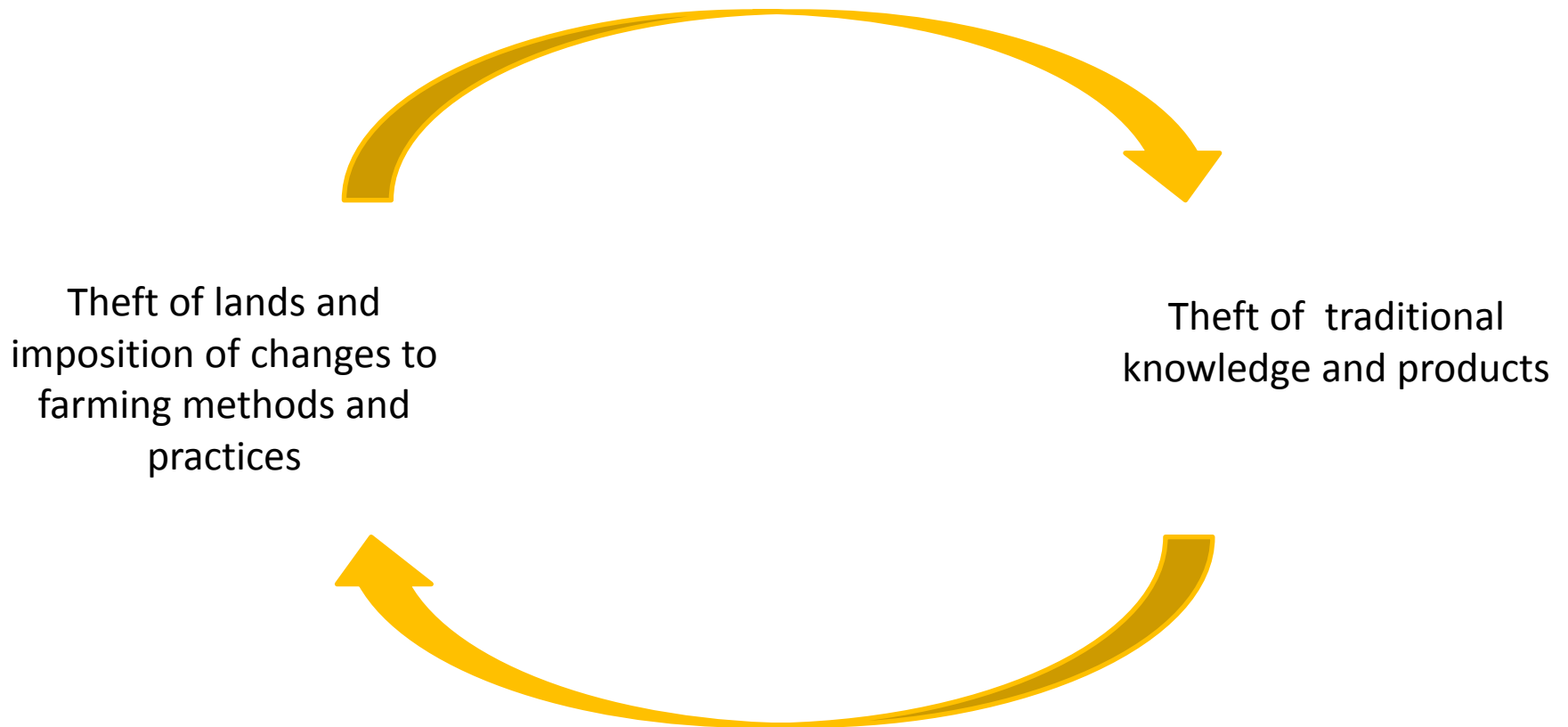
5.d. Distributive harms

- Make farmers dependent on corporations: Even when they provide the raw material, they are afterwards converted into consumers.
- 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.
- Small farmers are declaring bankruptcy and land is being taken by the banks

“In the case of commercialization of products incorporating traditional knowledge, indigenous and local communities suffer a double loss. On one hand, they cannot share the benefits arising from the new product, as this right stays with the holder of the patent. On the other hand, applications of modern biotechnology often eliminate the need for commercial growing of the original plant, depriving thus the local population from another source of income”.

(Tsioumanis et al, 2003: 608)

5.d.i The vicious circle of biopiracy



5.e. Sociological consequences

- By replacing barter for trading, it breaches the social fabric, and forces peasants and farmers to deal more with corporations than with each other eroding therefore social norms and practices, which are fundamental for the harmonious social dynamics (Christie, 1984)
- By patenting the common knowledge, the future generations will not have access to it, and cultural traditions will break.

5.f. Criminological consequences

- The homogenization of crops and the further impoverishment of aboriginal communities is a criminogenic source. Conflicts over access and use of the environment is the root of many topics studied by criminology. (Rodríguez Goyes, 2015)
- 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. (Rodriguez Goyes & South, Forthcoming)

5.d Its Means

- Legalize: Law. ([Wyatt, 2015](#))
- Legitimize: The progress discourse brought about by western science.
- Tool: Biotechnology.

6. Discussion



6.a. Justice

- Harm is injustice.
- Injustice is the diminishing of potentials.
- In a human society the diverging interests of the individuals may clash, therefore, bringing a diminishing of potentials for some.

Exercise

Dignity, good name, and security

- In February 2000, Jaime Rodríguez was hired as manager of the Millonarios Football Club. From that instant on, Iván Mejía Alvarez, sports journalist, has denigrated about the professional and human qualities of Mr. Rodríguez, thus, provoking the hooligans to ask for his resignation.

Freedom of speech

- I am a journalist, and as such, I have to express my opinion about the performance of the Football managers in Colombia. I said it before, and I will keep saying it, Mr. Rodríguez is a awful manager, unable to handle a big team such as Millonarios. That is what I think, and backed by my freedom of speech, I will keep saying it.

6.a.i Eco-justice

- Departing from the species justice perspective, we can understand that not only humans are entitled to rights, but also other sentient species:
 1. Other species share with the human being, the ability to suffer and the willing to live free of tortures ([Sollund, 2014](#)).
 2. It is incoherent, from a critical criminology perspective, to fight against the abuses towards some beings and not others.

“An eco-justice perspective refers to the broad orientation of green criminology directed at exposing different instances of substantive social and environmental injustice. From an eco-justice perspective, environmental harm is best framed in terms of justice, which in turn is based upon notions of human, ecological and animal rights, and broad egalitarian principles”.

(White, 2013)

In other words...

“It is not a scientific position but a life stance. Animals were here before humans, and they have a power over territory, they are powerful, they carry energy that protects them. The relationship to the environment must be consensual. Not between a subject and an object, but among subjects. For all us to live on earth peacefully we need to make agreements with them. We do not care about them because they are cute, but because they have rights and because they own the territory. Because they are powerful they can provide nourishment, but they can also generate sickness. We are interdependent for our survival. If you are going to cut part of a forest owned by animals, then you must restore what you took”

Aborigine from the Amazon Tropical forest.

6.b. Methodological issues

“From the point of view of intervention, the question is how best to achieve justice by ensuring that potential (as defined in relation to the nonhuman as well as the human) is realised as far as is practicable, and suffering and degradation diminished”.

(White, 2013)

“Social and environmental justices appear to collide and be jointly and equally unsustainable. When green/brown (environmental) concerns appear to be prioritized, they engender further social harms and impact negatively on local and regional communities”.

(Davies, 2014, P. 301)

The bigger the scope, the larger the conflict of interests

JUSTICE PERSPECTIVE	STAKEHOLDERS	INVISIBILIZED SUBJECTS
Environmental Justice	Human beings	The ecosystem – Non human individuals.
Ecological justice	Whole ecosystems.	Individuals
Species justice- Eco justice	The human beings, the ecosystem, non human individuals	-

“To put it differently, there is a need for a model that is ‘open-ended’, one that does not assume that we know the right or correct answers in advance. This recognises that in any discussion of harm (particularly within an eco-justice framework), there are always going to be conflicting interests and conflicting rights”.

(White, 2013)

6.b.i The tool

- Goal:

There is the need to build a tool to solve the clash of rights that take place in the implementation of an eco-justice practice.

- Proportionality test:

The proportionality test is a tool employed by constitutional tribunals to examine if a limitation of a right is in order (justified) by the implementation of an action or rule that halts it. (C-720/2007)

6.b.ii What does it take into account?

- Validness: only those by which the fulfillment of a fundamental right is sought.
- Suitability: It actually leads to the end sought.
- Necessity: There is the need to sacrifice one right, in order to get the other.
- Proportionality: The benefits brought about by the limitation of one right are bigger than its harms.

“it would be naïve and foolish to deny that a great deal of global public good has followed from western-led advances in health and agricultural sciences that owe their inspiration and origin to practices or products from developing nations.

Undoubtedly, human and animal health and welfare benefit widely from the discovery and commercial investment that make modern pharmaceuticals available”

(South, 2007)

“The research process done over biodiversity with the aim of developing marketable products; where the following processes take place: (i) systematical study of biological and genetic resources; (ii) transformation of the resource into a product; (iii) marketing in small or large scale; (iv) protection of the product through intellectual property”.

(Rodríguez Goyes, 2013)

Argument	Validness	Suitability	Necessity	Proportionality	Eco-just?
Helps the conservation of diversity by finding the value of it	Yes. It is interested in protecting the rights of the ecosystem	Yes. While it may seem to send the message of how valuable (and not dangerous) nature is. No. it has within it the message that it is valuable only if it provides a service to the human being, disregarding the intrinsic value all the individuals within the ecosystems. No. It creates a loss of biodiversity through the implementation of monocultures.	No. There are other social, and cultural methods, including law implementation and education, to achieve this goal.	-	No.
Promotes the corporative sustainable use of the components of the environment	Yes. It is interested in meeting the food, health and other needs of the growing human population.	No. Due to its dynamics, it favors monocultures, undermining food security and food sovereignty, impairing thus food needs and health .	-	-	No.

Argument	Validness	Suitability	Necessity	Proportionality	Eco-just?
Trough it new medicines for the human wellbeing are created.	Yes. It is interested in protecting human health	Yes. The process of searching over diversity and transforming it into products is the ideal to get medicines and products for the human well being.	No. The human being have always have an incentive to create and discover new applications for natural products without the reward of privatizing nature.	-	No.
It creates economic opportunity by sharing benefits from the eventual commercialization of products derived from the exploration.	Yes. It seeks to provide for all human beings an adequate standard of living (Article 11 CESCR)	No. The dynamics by biopiracy created ends in the monopolization of products and lands by a few private corporations.	No.	-	No.
It provides the opportunity for the scientist of developing countries, to develop their careers	Yes. It develops the right to work.	Yes. Transnational cooperation is a good way to strengthen work enhancement/security.	Yes. In a globalized world, there is the necessity to support the dialog among all actors.	No. It is only a small part of the people who benefits from it, while the majority of the population and other beings are harmed.	

- Illogical: Intellectual property regimes, holding bioprospecting, cannot be logically supported, and so, instead of being it an institution to protect rights, it is an institution designed to steal, subjugate and dominate.
- Discriminatory: IPRs used double standards to value the knowledge of some communities over others.
- Unnecessary: The wellbeing do not depend on the appropriation of products and creations.
- Harmful: Bioprospecting threatens the safety and wellbeing of humans, the ecosystems and other earthlings.

7. Final remarks

- Bio piracy can happen anywhere, as it deals with the omnipresent natural “products”.
- It affect all of us daily –some in a higher degree- given that we consume its products.
- It has directly related harmful effects in all other areas of life. I.e. “The vicious cycle of bio piracy”

TUSEN TAKK!

Muchas gracias