J. Braz. Chem. Soc., Vol. 23, No. 2, 194, 2012.
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0103 - 5053 $6.00+0.00

The Brazilian Genetic Heritage: Protect It or Use It Commercially?

The recent actions of the Brazilian Institute for the Environment and Renewable Natural Resources – IBAMA, as part of the Operation New Directions (started in 2010), by notifying research institutions, pharmaceutical, cosmetic and agricultural companies, accused of biopiracy and investigated for presumed illegal collection of Brazilian biodiversity products, have led those segment companies to a standstill in that area.

The stoppage results from the legal uncertainty brought by a number of flaws and omissions in the 2186-16 Provisional Measure-PM, of August 23rd, 2001, which regulates the access to the national genetic heritage, the protection and the access to the associated traditional knowledge, the sharing of benefits and the access to the technology and to the technology transfer for their conservation and use, aggravated by the hardening of supervision with severe fines and penalties on companies, universities and research centers.

In the same PM, the deliberative and regulatory Genetic Heritage Management Council (CGEN) was also created, having, among its functions and duties, the coordination of the implementation of the policies for the management of the genetic heritage, the establishment of technical standards, the criteria for the shipping and access authorizations; the guidelines for the Contract for the Use of the Genetic Heritage and Benefit Sharing, the criteria for the creation of databases for the recording of information on the associated traditional knowledge, the supervision of the activities of access and shipment of samples of genetic heritage components and of access to the associated traditional knowledge, the deliberation on the authorization for the access and shipment of samples of genetic heritage components, the authorization for the access to the associated traditional knowledge, the accreditation of Brazilian public institutions to be trustees of samples of genetic heritage, the approval of Contracts for the Use of the Genetic Heritage and Benefit Sharing, the promotion of debates and public hearings on the issues covered by the PM, besides a number of other tasks.

To have such amount of tangled tasks and duties done, the Council is composed of representatives from 19 organs and Federal Government entities, with vote right, such as: the Ministries of Environment, Science and Technology, Health, Justice, Agriculture, Defense, Culture, Foreign Affairs, Industry and Commerce, IBAMA, the Rio de Janeiro Botanical Garden, the National Council for Technological and Scientific Development – CNPq, the National Institute of Amazonian Research, the Emilio Goeldi Museum, the Brazilian Agricultural Research Corporation – EMBRAPA, the Oswaldo Cruz Foundation – FIOCRUZ, the National Indian Foundation – FUNAI and the National Institute of Industrial Property – INPI. In addition, guests, such as the Palmares Cultural Foundation, the Brazilian Society for the Science Progress – SBPC, the Brazilian Association of NGOs, the Brazilian Association of Biotechnology Companies, the Brazilian Business Council for Sustainable Development, the National Coordination of Rural Black Quilombo Communities, the National Council of Rubber Tappers, the Coordination of the Indigenous Organizations of the Amazon, among others, also take part in the deliberative meetings, with voice right only.

A bureaucratic monster has, thus, been created, incapable of taking any decision in a reasonable span of time. As a result, there are requests and processes sent to CGEN waiting for a decision for over four years, with no expectation of getting any response.

The objective of the PM was to prevent multinational companies, entities and individuals, inspired by the traditional knowledge and motivated by questionable economic interests from stealing molecules found on species from the Brazilian wild fauna and flora in order to explore them economically into medicines and cosmetics abroad.

No doubt such situation occurred in the distant past (let us recall the rubber tree case, outward biopiracy and the coffee and sugar cane one, inward piracy), has occurred recently (let us also recall the Bioamazonia-Novartis affair) and evidently a position on the matter should be taken, so much so being Brazil a signatory of the Convention on Biological Diversity.

The problem is that the reality and the situations of access to the Brazilian genetic resources are much more varied and complex than what is foreseen by the PM. Let us remember that our cultural heritage has always made us use our natural genetic resources in applications as diverse as food, medicine, cosmetics, various artifacts and many other uses. As we look around, we see that from the *capixaba muqueca* to the *açai* bowl in the juice shop around the corner, we are using resources from the Brazilian biodiversity. And the banana? Is it Brazilian or not? Should we request CGEN authorization to use it? And the apple? It is European, for sure, but what about the variety developed by Embrapa for the Brazilian conditions?

And the tropical soybean, a Chinese plant that has been improved and adapted to the Cerrado soil and that brings billions of dollars to the country? Is it ours or not? And what about the sugarcane, in the same situation?

What does the PM mean by "genetic heritage"? It is defined, in article 7, item I, as "all information from genetic origin, contained in samples of all or part of a plant, fungal, microbial or animal species, in the form of molecules and substances originating from the metabolism of these living beings, and in extracts obtained from these living or dead organisms, **found in *in situ* conditions, including domesticated** or kept in *ex situ* collections, **if collected from *in situ* conditions, within the Brazilian territory, on the continental shelf or in the exclusive economic zone**". In other words, according to the PM, *açai* and *guarana,* as well as bananas, apples, grapes, soy beans and sugarcane could be considered part of our genetic heritage.

Obviously, the PM does not deal with the direct access to the heritage represented by the enjoyment of an *açai* bowl or eating a banana. So, what is considered to be, then, such "access to the genetic heritage"?

Still according to the definitions found in article 7, item IV informs us that the access to the genetic heritage is "*the acquisition of samples of a* ***genetic heritage component for the purpose of scientific research, technological development or bioprospecting, with a view to its industrial or other application***".

We still have another issue, which is the access to the "associated traditional knowledge". Referring once more to article 7, we learn that it is "*the individual or collective information or practice of an indigenous community or local community, with real or potential value, associated to genetic heritage*" and that "the access to associated traditional knowledge" deals with "*the acquisition of information on individual or collective knowledge or practice, associated to the genetic heritage of an indigenous community or local community*, ***for the purpose of scientific research, technological development or bioprospecting, with a view to its industrial or other application***".

Thus, we come to the conclusion that the objective of the PM is to regulate the access to the genetic heritage and to the associated traditional knowledge **when there is some possibility of applying the material derived from the Brazilian genetic heritage to an industrial use**.

We do not know what might be considered "other application", as stated in the PM.

The complexity of the issue shows that, between light and dark, there is a huge gray zone, in which there are thousands of companies, in dozens of sectors, in hundreds of situations not foreseen by the PM and very, very far from what might be considered biopiracy. In this scenario, infinitely more complex than the one conceived by the PM authors, one can find a number of situations of inequality in the treatment of the matter, which includes a great lack of information on the part of sectors potentially affected by the PM (which have never heard of such PM and which do not consider themselves included among companies that access the Brazilian genetic heritage – no matter what it is), passes by the lobbies' action, which protects certain sectors and reach others with more awareness and visibility.

Among the companies with awareness and visibility that were victims of such inequality of treatment are, for example, some outstanding cosmetic industries, which since the issuing of the 2186 PM , have been trying to regularize their research and development activities with plants from our genetic resources. The impasse created by the PM lack of clarity, together with the strong pressure for launching new products, ended up putting them in a situation of "exposed illegality", which eventually brought them heavy fines – ironically, the very companies that were trying to respect the PM.

Moreover, consider the fact that IBAMA – a government enforcement agency – is part of the CGEN and a paradox is set: those who want to regularize their situation have to apply to CGEN, which has among its members IBAMA, which, on learning that a certain industry wants to regularize (being, therefore, irregular up to that point), **sues the company, charging fines that may reach millions of reais!!!**

The recent publication of Resolution # 35, of April 27, 2011, aiming at "*regularizing the activities that access the genetic heritage and/or the associated traditional knowledge and the economic exploitation not in accordance with the 2186-16 Provisional Measure*" has already set the trap and recognized the paradox, for its article 9 clearly says that "*in the cases this Resolution is about, involving the economic exploitation of products or processes developed from a sample of a genetic heritage component or associated traditional knowledge and not in accordance with the in-force laws, the Genetic Heritage Management Council shall notify the office of the Solicitor-General of the Union – AGU for knowledge and actions*".

Putting it in a nutshell: in case you want to fit the PM, you will be fined 20% OF YOUR GROSS INCOME, among other penalties stipulated in law.

Thus, the lack of clarity of the PM itself, combined with the operational problems of the CGEN and the repressive action triggered by one of its members, ended up by taking the so-called "Brazilian biodiversity economy" to a stoppage.

As biologists and economists already know, organized systems, such as living beings (from bacteria to *Homo sapiens*) and companies, in order to keep viable, should adapt themselves to changes in their environment. It is not different in the cosmetic sector.

Companies simply quit the environment with uncertainties that can affect them and move to safer environments. In this case, given the permanent need for innovation, with new releases every month, the effort for research and development is simply replaced by the use of imported species, out of the PM scope.

The result, visible in some sectors in which the innovation need is permanent and accelerated, such as the cosmetic industry, is that the companies are simply quitting all the projects currently under way that involve the use of any product considered to originate from the Brazilian biodiversity

Let us not forget as well that Brazil is not the only holder of areas in the Amazon: the French Guiana, Surinam, the Guiana, Bolivia. Venezuela, Peru and Colombia also have part of their territories in the so-called Amazon region. As an example, there already are French suppliers of *guarana* extract and Spanish producers of the *açai* extract.

Another alternative welcomed by those industries is the use of species not part of the Brazilian biodiversity and not obtained here in Brazil (to escape the interpretation of what might be "the Brazilian genetic heritage", as defined in the PM). The companies' marketeers will do the repositioning job and we will soon have new products with Chilean grapes in place of *açai* and Italian olive oil in place of the Brazil nut oil. Morocco's Argan oil and shea butter from Ghana or Burkina Faso in Africa are also cosmetic industries' known options, for which there is no need for a registration or authorization from CGEN, nor do they set up illegal access to the Brazilian genetic heritage.

In summary: the Brazilian industry will adapt to survive and ultimately the innocent victims will be the local collector who harvests *Acai* on the Marajó island, the rubber tapper that gathers Brazil nuts in the Amazon rainforest, the backwoodsperson from Serra Talhada, who sells ciruela and soapberry and the fisherperson who harvests seaweed on the Ceara coast. The market for their products will decrease or will never be fully developed. They are the ones who will suffer most.

Obviously, the problem does not lie in the necessity or not of a legal norm. Brazil's commitment, both as head of the Rio-92 Conference and a signatory to the Convention on Biological Diversity (ratified by 2 519 Decree, of March 16, 1998), as well as a defender of the biodiversity conservation, its sustainable use and the fair sharing of the benefits arising from the economic use of the genetic resources is exemplary and fundamental to the preservation of our riches.

The problem lies in the lack of clarity in the criteria, in the decision sluggishness and in the lack of legal security. Provisional measures are imperfect legal instruments, mainly because they lack the assessment of the society representatives, that is, the National Congress. The 2186 PM is no exception.

We urgently need to define a legal framework that makes sense, with wise and clear rules, able to create an environment of tranquility and safety for the involved actors and enable the creation of value and the economic, fair and sustainable use of the genetic resources of the country.

Daniel Weingart Barreto[1]
ASSESSA Industry, Commerce and Export
danielbarreto@assessa.com.br

1. Office address: Rua Cardoso Quintão, 110, 21.381-460 Rio de Janeiro, RJ, Brazil