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Genetic Resources and Traditional Knowledge in Brazil

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1. Legislation Development

Brazil holds one of the World's biggest concentrations of biodiversity and since 1933 has enacted many decrees and regulations on the access to its biological diversity. However, attention to the related Traditional Knowledge (TK), at least under legal terms, was strengthened only after Brazil became a party to the Convention on Biological Diversity (CBD).

As much as in the rest of the World, where many efforts are taking place to discuss the subject, Brazilian legislators are also trying to set up an initial model legislation though nothing very much has yet gone from paper to practice, because access to TK, its protection, use and consequently the sharing of benefits is a very complicated matter.

The first proposal for a Law submitted to Congress dates from 1995 (Senate proposal no. 306, by Senator Marina Silva). It was followed by proposal no. 4579 by Congressman Jaques Wagner in 1998 and slightly later by proposal no. 4751 submitted by Government. Meanwhile, some individual States began to propose and approve their own texts to regulate the access to genetic resources within their jurisdiction (e.g. State of Acre no. 1235/1997, State of Amapa no. 0388/1997 and State of S.Paulo law proposal, giving different levels of protection to TK). In the regulations of the Amapa Law one can find many of the elements being discussed by Congress.

In the Project introduced by Congressman J. Wagner there is a proposal for the creation of a national catalog where members of indigenous and local communities or any other person should deposit documents related to TK. This would allow for better informed decisions on how to access and use TK when dealing with contracts and further developments and should help to guarantee an equitable sharing of benefits. It also proposes that indigenous and local communities hold exclusive rights on any TK associated to genetic resources. In its article 47, the text proposes that no intellectual property rights be approved for inventions which products and processes relate to TK or genetic resources not accessed in conformity with the proposed law.

In June 2000, while discussions were taking place in Congress, Government published a Provisional Law (PL no.2.052) on "Access to genetic resources, protection and access to TK, benefit sharing and access and transfer of technology for its conservation and use" with a similar content to its former proposal to Congress and which is now the ruling Law in Brazil.

In its Chapter III, the PL states that TK associated to genetic resources will be lawfully protected against illegal use and exploitation or other actions not authorized by the national authority designated to implement the provisional Law. It also states that TK can be subject to some cataloging according with further regulations to be implemented and that the protection given by this PL should not limit any other intellectual property rights that may incur on TK.

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It also guarantees that indigenous or local communities which develop, hold and preserve TK associated to genetic resources shall have the right to: I – have the access and origin of TK indicated in all related publications, uses and exploitation; II – prevent third parties from researching on, using and exploiting genetic resources related TK; III – prevent third parties from releasing information on TK under their control; IV – receive, directly or indirectly, payment or royalty in return for the commercial exploitation of TK.

This PL has yet to be regulated by Decree to create the National Authority or other mechanism responsible for its implementation. Consequently, many related to the access to genetic resources and in some cases, to associated TK, have been postponed since the publication of this PL. For instance, the Brazilian Agriculture Research Corporation (Embrapa), whose Genetic Resources and Biotechnology Research Center is used to collect germplasm around the country, is waiting to resume its activities. The National Research Council, who previously authorized international scientists to collect genetic resources along with a national institution, is also waiting for further clarification of the rules. Access to protected areas or indigenous reservations are not being authorized by the Ministries of Environment and Justice, as before. Even thought the PL does not rule over private land, no contract for bioprospecting between international private companies and a national party has been discussed lately. Once some guidance is giving on the rules for access to genetic resources and related TK, it will be very interesting to see how indigenous people will react and move towards a national cataloguing of TK or some other sort of organization showing that a protection of their TK is somehow feasible and nearer to reality.

While defining its national legislation Brazil is fully committed with the decisions of COP V to the CBD having negotiated together with other parties the text of the Program of Work on the implementation of Article 8 (j) and related provisions, in Nairobi, May 2000. Among the nine tasks selected for the first phase, task 7 of Element 4 (equitable sharing of benefits) and task 12 of Element 7 (legal elements) are particularly interesting for the implementation of TK protection as they deal with the development of guidelines to help to ensure legal access and the consequent share of benefits and to help member countries to devise ways to safeguard and fully guarantee the rights of indigenous and local communities over their TK, innovations and practices, within the context of the Convention. In fact, any help for the advancement of this matter is very welcome.

2. The Importance of Genetic Resources and Associated Traditional Knowledge for the Survival of Cultural Values and Maintenance of Life Quality of Brazilian Native Indians - A Brazilian Experience

When the Portuguese navigators landed on Brazilian coasts, in the 16th Century, there was a native population estimated to be around 5,000,000 American Indians, distributed in 900 different ethnic groups. Today, in Brazil, there are only approximately 400,000 native Indians distributed in 215 ethnic groups, speaking 180 different languages or dialects. For this native indian population the Brazilian Government has demarcated 895,424km^2, equivalent to 10.52% of the Brazilian territory.

The Kraho Indians, one of these surviving native indian nations, are one of the very few that have been able to maintain many aspects of their traditional cropping system and ways of life. They have survived despite the waves of diseases brought to America by European colonizers. During the 1940's they have also withstood violent attacks carried out by non-native settlers to drive them off their land. In 1951, after negotiations with the Brazilian Government, the Kraho nation was granted 3,200 km^2 of territory in Tocantins State. The greatest threat to the survival of the Kraho people came in the 70's, when governmental

policies encouraged native indians to change their traditional farming practices and crops for more modern commercial agricultural systems. For the Kraho, this meant also learning how to grow rice, a crop that was completely alien to their culture.

Unlike their traditional itinerant farming systems, growing rice requires intensive cultivation using high quantity fertilizers, pesticides and other chemicals never used by the Kraho people. As a consequence Kraho farmers watched as their soils became degraded and their agricultural production declined. Malnutrition in Kraho communities rose, as did their dependence on government social programs. With time they lost their multicroping system based on landraces, specially corn.

Also with the introduction of modern crop varieties to their communities, the seed varieties which had been selected by their ancestors and maintained from generation to generation began to disappear along with their TK. According to the elderly community members the lack of those seeds contributed to a gradual loss of community roots, represented by the rituals associated with traditional agricultural methods and agricultural calendar. This induced many young Kraho Indians to abandon their traditional lands and migrate to urban margins and impoverished areas.

The attempt to modernize Kraho agriculture failed to consider how such a radical shift away from traditional farming practices would affect the people's sense of their own cultural identity. The multicolored corn, one of their most precious lost seed, for instance, was the product of centuries of seed selection and preservation. These native farmers had successfully developed varieties that best suited their growing conditions and social needs and they planted a variety of seeds to better assure their families that, no matter what the weather conditions were that season, some corn would survive. Over centuries, the rhythms and routines of the growing seasons determined their social calendar and had found expression in Kraho folklore, beliefs, art and rituals (more than 300 different rituals were already registered). By abandoning their traditions a generation gap began to divide the community as elders no longer passed on TK to their children and grandchildren. With poverty increasing and cultural identity fading, many Kraho chose to leave their territory for the dubious prospects of finding ways to survive in larger cities.

The true extent of the shift to rice monoculture became apparent when Kraho leaders, tried to reestablish their traditional crops. It was discovered then, that they no longer had any seeds. Their corn was gone.

Fortunately, in 1978, with the financial support of The International Plant Genetic Research Institute (IPGRI), Embrapa organized a series of expeditions to collect and conserve seeds, tubers and other materials and to rescue endangered germplasm. During the course of one of these expeditions, corn from the Kraho region was taken back to Embrapa's genebank, where it remained in cold chambers until it was demanded back by the Kraho almost twenty years later, in 1995.

For the elderly leaders to once again see the corn that they had known from their youth, corn that they feared had vanished forever, was a profoundly emotional moment. Small samples of seed were, in that occasion, taken from the cold storage chambers and returned back to the Kraho communities for planting.

As a result of the successful reintroduction of corn into the Kraho territories, family nutrition increased and community ties grew stronger. The Kraho nation experienced a resurgence of native pride. Now Kraho grandparents are able to pass on to their children and grandchildren the skills and knowledge developed over the course of hundreds of generations and their children have the chance to grow up feeling pride about their heritage.

In 1996 a group of Kraho leaders returned to Embrapa with gourds containing regenerated corn seeds requesting the preservation of those seeds "FOR THEIR CHILDREN AND GRANDCHILDREN".

Due to the success of the repatriation of the lost germplasm to the Kraho Indian group, an agreement between the Brazilian Agricultural Research Corporation (Embrapa) and the Federal Agency for Indian Affairs (Funai) was signed for the continuation of this program and also for the collection and conservation of genetic resources on Indian lands with the direct participation and previous consent of the targeted community, ensuring the continuation of this best practice to contribute towards sustainable development.

Between 1995 and 1999 seeds of broad beans, cucurbits, peanuts or propagation materials of cassava, sweet potatoes and yams were released by Embrapa to the Kraho communities.

In 1999 a cooperation agreement was signed between Embrapa and KAPEY (the Association of all Kraho communities) in order to assure the development of an ethnobotanic project with the involvement of all Kraho villages. In this project, a group of researches composed by biologists, taxonomists, agronomists, and soil specialists following the guidance of anthropologists and indianists are studying a few species secularly used for food and medicinal purposes by the Kraho community, and not yet known by non indians, aiming at returning economic benefits to them as well as guaranteeing their food security and environment preservation.

Other native communities, inspired by the Kraho nation's experience, have approached Embrapa about the possibility of participating in similar cooperative agreements. Indigenous communities are now recognizing that biodiversity can be a valuable natural resource on their territories and a valuable source of nutrition and that their traditional knowledge on farming practices represent a very vital factor in maintaining their social cohesion.