

Institutional misunderstandings about genetic diversity research

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Activities concerning biological diversity, such as research, prospecting, conservation, industrial application or commercial exploitation in Colombia (and the Andean community), require authorisation from the Ministry of the Environment, Housing and Territorial Development (MAVDT). Industrial application or commercial exploitation of biological resources ignore such type of authorisation; however, researchers have shown growing interest during the last few years in applying for authorisation for having access to genetic resources (AGR) where Colombia is the country of origin. In spite of efforts to comply with current legal requirements, the results obtained so far may discourage researchers and research institutions more than encourage them.

The Universidad Nacional de Colombia (UNALCO) began to apply for permission to carry out research called, “Isolating and identifying a microorganism belonging to the genus *Lactococcus* and whose enzyme activity could lead to obtaining a natural polymer” in August 2001. At this time there were very few AGR requests and, in spite of Decision 391/1996 having been in existence for 5 years, not one single contract had been granted. This request had setbacks during its processing, particularly due to difficulties and ambiguities in communication between the environmental authority and UNALCO.³

Given the importance of research, innovation and interest in its possible industrial use, UNALCO carried out research whilst at the same time applying for AGR authorisation. Carrying out research and the potential of the results meant that UNALCO would present a single request having both academic and commercial ends⁴.

In spite of the persistence, time and resources invested by UNALCO to provide the application with continuity and obtain an access contract, MAVDT began administrative research into UNALCO for attempting to gain illegal access to genetic resources in October 2007. Only in 2010 has MAVDT notified Resolution 445 accepting the AGR request, meaning that it would engage in the negotiating stage for signing the corresponding contract. However, such resolution only considered the project request regarding its industrial application and commercial exploitation, excluding the initial request. This is understandable because MAVDT's Environmental Licenses, Permits and Applications office told UNALCO that the AGR request for research purposes would

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3 Nemogá and Rojas. 2009. Algunas lecciones sobre el acceso a recursos genéticos en Colombia. Dos estudios de caso, *Revista Acta Biológica Colombiana* 14 (2): 137-160.

4 Application presented by the Universidad Nacional de Colombia in December 2006.

be resolved by the sanctions procedure being brought against UNALCO in communication dated 15th April 2008.

MAVDT's Ecosystems' office issued its opinion as part of the administrative process initiated against UNALCO in June 2009, stating:

A project of this nature, due to its complexity in the mid-and long-term, requires the execution of a series of sequential stages having dynamic development and evolution. Not continuing with one of the subsequent phases will lead to having to slow down obtaining satisfactory results, finally leading to failure and loss of efforts and resources of a different nature [...] MAVDT has taken a long time to take a decision about the request, so that after almost 8 years, it still has not granted or refused the contract, meaning that the university could be in an uncertain situation, thereby limiting the project's development and advance (Ecosystems office - Ministry of the Environment, Housing and Territorial Development, 2009).

Even more importantly, the opinion concluded that there were sufficient elements to allow UNALCO to be exonerated from being sanctioned or, failing that, a reduced sanction being imposed.

Nevertheless, MAVDT fined UNALCO for gaining illegal access to genetic resources on the 29th July 2010. So, after 9 years of procedure and after substantial public resources being invested in the project, UNALCO became the first institution in the country to be sanctioned. This happened in spite of having produced benefits, such as training undergraduate and post graduate researchers involved in the project, contributing to knowledge and the use of Colombian diversity. UNALCO lodged a countersuit against the MAVDT fine which was still pending resolution on November 7th when this editorial was written.

A negotiation meeting has not been held to date to agree on and sign the corresponding contract regarding the AGR request for commercial ends in spite of MAVDT having stated in May this year that the matter was, "being advanced within this entity" (Environmental Licenses, Permits and Applications office – Ministry of the Environment, Housing and Territorial Development, 2010) and, that when a draft copy of the contract was consolidated, UNALCO would be informed of the date of the respective meeting.

UNALCO has not only shown interest in complying with Decision 391 and the pertinent regulations by presenting this AGR request but has also contributed to research into the AGR system and preparing proposals for better implementing it (through special scientific and technological cooperation agreement 59/2008 between MAVDT and UNALCO), raising awareness (2nd Congreso Colombiano de Zoología,⁵ 5th Congreso Colombiano de Botánica,⁶ Foro: Marco legal y alternativas de aplicación a los trámites de permiso de investigación y acceso a los recursos genéticos sobre biodiversidad, en

5 November 2006. M. G. Andrade-C., C. J. Aguirre, J. V. Rodríguez-Mahecha (eds.). 2006. Paper: Acceso a los recursos genéticos y conocimiento tradicional: necesidad de una solución integral. Mesa redonda - La investigación en Colombia, entre la imposibilidad y la biopiratería. Segundo Congreso Colombiano de Zoología. *Libro de resúmenes*. Bogotá: Panamericana.

6 April 2009. A. E. Baca-Gamboa, M. S. González-Insuasti, A. L. Patiño-Chaves (eds.). 2009. Paper: Acceso a recursos genéticos, dilema entre la legalidad y la ilegalidad. V Congreso Colombiano de Botánica. *Libro de resúmenes*. Pasto: Edinar.

áreas de influencia étnica. Estudios de caso,⁷ Claves para el debate público – Investigación en biodiversidad o pérdida de soberanía,⁸ 4th Congreso Internacional de Plantas Aromáticas y Condimentarias “Cosmética Natural”⁹ and presenting permit requests for study aimed at scientific research (Permiso Marco de Investigación No 4, 10th February 2010, and Convenio de Cooperación entre UNALCO y la Unidad Administrativa Especial de Parques Nacionales Naturales – UAESPNN - 2009) and AGR. UNALCO has also constructed a proposal for reforming existing regulations and has sought an institutional solution for obtaining environmental authorisations within the current judicial framework. It is well known that UNALCO has invested substantial resources and researchers and professionals’ time in obtaining authorisations and maintaining ongoing contact with MAVDT to obtain research permits and access contracts, in line with existing legislation.

Given UNALCO’s efforts in this regard, is imposing a fine against it considered a “reduced sanction”? What type of reply does MAVDT offer so that researchers and education and research institutions apply for permits and corresponding AGR contracts, even for ongoing projects? Should universities assign an item in their budgets for research requiring AGR which would finance not just application expenses but also pay fines for sanctions imposed for carrying out prior research?

The MAVDT sanction has meant that UNALCO has been affected by not securing the AGR contract and also the request for a patent in Colombia. The Industry and Trade Superintendant’s office denied granting a patent for the an invention called, “*Lactococcus lactis* NRRL B-30656-based biopolymer, the process for *Lactococcus lactis* NRRL culture and the process for producing the biopolymer” Resolution 19617 April 2010. Researchers and education and research institutions have increasing interest in obtaining AGR contracts; however, when a sanction is imposed it could imply that research projects become distorted, or that prior research results become concealed. Research institutions and researchers will tend to consider whether to publish their results and whether it is better to devote their efforts towards obtaining patents outside the country. This situation unfortunately does not promote projecting our scientific institutions and will end in crossing the line between bioprospecting and biopiracy.

It would thus seem paradoxical that Colciencias is celebrating the inauguration of the Nacional Genomic Sequencing Centre “aimed at promoting latest-generation tools in scientific, technological and industrial sectors for knowing about, protecting and appreciating biodiversity.”¹⁰ Likewise, the Bioinformatics and Computational Biology centre located at UNALCO’s Manizales site has been inaugurated recently. Nevertheless, the scope and projection of these centres concerning research in Colombia could

7 May 2009. Adriana Ortiz et al. 2009. Paper: Marco legal y alternativas de aplicación a los trámites de permisos de investigación y acceso a recursos genéticos sobre la biodiversidad en áreas de influencia étnica: estudios de caso. Manuel García Valderrama, Gonzalo Andrade-C. (eds.). Bogotá: Universidad de Bogotá Jorge Tadeo Lozano, Universidad Nacional de Colombia, Ministerio de Ambiente, Vivienda y Desarrollo Territorial.

8 October 2009. Universidad Nacional de Colombia. 2009. *Investigación en biodiversidad o pérdida de soberanía. Claves para el debate público* 30. Bogotá: Unimedios, Universidad Nacional de Colombia.

9 September 2010. Paper: Acceso a recursos genéticos y distribución de beneficios. Memorias del IV Congreso Internacional de Plantas Medicinales Aromáticas y Condimentarias. Palmira: Universidad Nacional de Colombia, 2010.

10 <http://www.colciencias.gov.co/noticias/se-inaugur-el-centro-nacional-de-secuenciacion-genomica>

become seriously bogged down during the next few months (or years) since only 39¹¹ research projects have been granted authorisation to gain access to genetic resources found in Colombian diversity. This is without bearing in mind scientific investigations carried out with public funds through Ministry of Agriculture and Rural Development competitions, 20% of them implying AGR requiring an access contract.¹² Things being as they are, what will continue happening is that research activities in biological and genetic diversity will be carried out without environmental authorisation, assuming the risk of administrative sanctions such as that imposed on UNALCO by Resolution 1459/2010.

Once more, this shows the lack of coordination between applying the regulations, policies, institutions and Colombia's reality. Investigations financed with public resources and developed by universities/UNALCO face difficulties and limitations from applying regulations and the actions of environmental entities responsible for complying with Decision 391. The country continues investing in strengthening endogenous scientific and technological capacity by training researchers and establishing research centres which will later see their research programmes regarding Colombian biodiversity becoming frustrated. If MAVDT strives to comply with Decision 391, without adopting modifications to existing regulations thereby making its fulfilment viable, then it will drastically limit national research ability, ignoring the time and resources invested in understanding the problem and proposing solutions.

Put colloquially, as expressed by researchers in October 2009 at UNALCO's Medellín site during an AGR workshop, the irrationality of this situation makes researchers fear that they will end up receiving "imprisonment in your own laboratory" instead of suitable solutions being provided for the problem.

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11 This can be confirmed by consulting the Public Record of Access to Genetic Resources: <http://www.minambiente.gov.co//contenido/contenido.aspx?catID=138&conID=2734> [last consulted on: 4th November 2010].

12 Nemogá et al. 2010. *La investigación sobre biodiversidad en Colombia: propuesta de ajustes al régimen de acceso a recursos genéticos y productos derivados, y a la Decisión Andina 391 de 1996*. Bogotá: Universidad Nacional de Colombia, Instituto de Genética.

nismo perteneciente al género *Lactococcus* y cuya actividad enzimática puede generar la obtención de un polímero de origen natural”.

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