

# **MEMORANDUM OF UNDERSTANDING FOR A COLLABORATION ON MICROBIAL BIODIVERSITY**

This Memorandum of Understanding (MOU) is by and between the Ministry of the Environment, referred to hereinafter as “the MAE” and represented by Mr. Fabian Valdivieso, Minister of the Environment, and the Institute for Biological Energy Alternatives, referred to hereinafter as “the IBEA” and duly represented by its Executive President, J. Craig Venter, PhD, with the parties agreeing to the following:

## **1. BACKGROUND**

Whereas the MAE is a non-profit institution responsible for the protection and management of the protected areas in Ecuador;

Whereas the IBEA is a non-profit institution dedicated to genomic research and policy, supported by its affiliate, the J. Craig Venter Science Foundation, the Gordon and Betty Moore Foundation, as well as by scientific research grants from the United States government, and whose mission is the application of genomic science to help solve the world’s energy and environmental challenges;

Whereas the IBEA is undertaking a global oceanic expedition to carry out a scientific research project on board the R.V. Sorcerer II, involving microbial sampling for the study of microbiological diversity in the Galapagos using a ‘whole environment’ genomics approach, with the objective of characterizing the microbiological diversity of the coastal waters and the terrestrial communities around the Galapagos Islands to determine the complex interrelationship between groups of microorganisms that affect regional and global environmental processes;

Whereas the Parque Nacional Galápagos (National Galapagos Park) has authorized the research permit based on the criteria issued by the Estación Científica Charles Darwin (Charles Darwin Scientific Station), a high-level academic and scientific institution that recommended the approval of said research for its great value toward the better understanding of the role played by microorganisms in the marine environmental processes, and based on the report issued by the University of Guayaquil’s technical and scientific Advisor, which established that the research shall promote the scientific, technological, and technical capabilities at the national level for the preservation of biological diversity and sustainable utilization of biological resources;

Whereas the IBEA has access to advanced technology facilities for the study of genomic sequencing and informatics for the production and analysis of genomic data, through an affiliate that uses pioneer methods for the characterization of both culturable and unculturable microbial diversity at the genomic level;

Whereas the IBEA has secured initial funding from the J. Craig Venter Science Foundation, the Gordon and Betty Moore Foundation, and from the United States Department of Energy, Office of Science, for the genomic sequencing and analysis of microbial samples collected on the global sampling expedition, at no cost to the Parque Nacional Galápagos;

Whereas the parties agree that the output of this collaboration shall be of great scientific value and great benefit to both the public and scientific communities, in Ecuador and worldwide, by ensuring that the genomic data arising from this collaboration be made available to the scientific community pursuant to the provisions established in Resolution 391 of the Cartagena Agreement; and

Whereas the sampling and genomic analysis of the microbial communities in Ecuadorian waters and lands shall provide a microorganism inventory of inestimable value to Ecuador.

## **2. PURPOSE OF THE MOU**

The purpose of this MOU is to formalize the mechanisms for the development of the Project Plans between the parties; these plans shall be developed and attached to this agreement.

All of the procedures established in international treaties and national legislation in effect and applicable to this case should be met in order to carry out the Project Plans, requiring authorization by the appropriate national authority through the Parque Nacional Galápagos.

These Project Plans may include scientific research in the form of specific sampling to be conducted by the parties, as well as related training, education, and outreach activities in areas such as genomics, proteomics, and bioinformatics.

The parties agree to begin developing one or more scientific Project Plans of mutual interest.

## **3. NATURE OF THE COLLABORATION ACTIVITIES**

The parties should collaborate on designated projects of mutual interest as determined and created by the Project Plans.

Each party generally shall be responsible for the costs of its own contributions to the activities outlined in the Project Plans unless otherwise agreed upon in writing prior to incurring those costs.

In the event that a third party should request that either party provide samples or information derived from the collaboration and specifically dedicated to a designated project under the Project Plans, the party receiving the inquiry shall obtain written authorization from the other party before providing such samples or information, as established in Resolution 391 of the Cartagena Agreement.

## **4. INTELLECTUAL PROPERTY**

Given that the collaboration which is the object of this MOU is for the great benefit to the public and to the scientific communities in Ecuador and throughout the world through the publication of basic scientific research, the parties agree that the nucleic acid libraries generated from the sampling activities shall be used exclusively for purposes of generating public information on sequencing.

In addition, neither party shall pursue nor exercise intellectual property rights over the genomic data and results developed through the Project Plans since this information is part of the genetic patrimony of the state of Ecuador.

The parties agree that the samples collected through the Project Plans are solely for basic scientific purposes, and under no circumstances shall the Parties be able to make any commercial use of the samples or of the information obtained from them.

## **5. PUBLICATION AND DISSEMINATION OF INFORMATION**

In order to make the information available to the global scientific and public communities, the parties specifically agree that the raw genomic data shall be provided only with their express permission. Once the data have been analyzed, all the information shall be deposited in public databases and published in scientific forums, where it shall be acknowledged that the information obtained is part of the genetic patrimony of the state of Ecuador.

The IBEA and the MAE, through the Parque Nacional Galápagos, shall jointly collaborate on one or more scientific publications analyzing the genomic data in the manner established in the Project Plans approved by the appropriate authority. The parties agree that scientists from other countries, who are also collaborating in the global sampling expedition, may be acknowledged as coauthors. The MAE, through the Parque Nacional Galápagos, agrees to provide cooperation within the scope of its jurisdiction and the applicable legal framework in order to facilitate the objectives of the global sampling expedition in the Galapagos Islands.

The parties shall also work, as appropriate, on joint activities to disseminate and communicate information about and deriving from the collaboration, not only to the scientific community, but also to the public in general, and to educational institutions, particularly those in Ecuador, as long as this information is used solely for scientific, not commercial, purposes.

## **6. TERM AND TERMINATION**

The term of this MOU shall be two years from the date of signature and may be extended by mutual agreement of the parties, who must indicate their willingness to do so at least two months prior to its expiration.

If the parties do not develop at least one joint Project Plan within a period of one year from the date of signature of this MOU, it shall automatically terminate without further obligation to either party.

Paragraphs 4, 5, and 8 of this MOU shall survive any termination of this MOU.

## **7. REPRESENTATIONS AND WARRANTIES**

Each party hereby represents and warrants to the other party that: (i) it has the authority to sign this MOU; (ii) it is not a party to any agreement or understanding nor knows of any law or regulation that would prohibit it from signing and performing its obligations under this MOU or that would conflict with this document; (iii) when executed and delivered, this MOU shall constitute a legal, valid, and binding obligation that must be satisfied in accordance with the provisions of this MOU; and (iv) each party shall perform its obligations under this MOU in

compliance with all laws and international agreements ratified by Ecuador and applicable to this case.

The IBEA shall be responsible for obtaining the necessary and appropriate authorizations from the Ecuadorian national government and the Andean Community.

## **8. MISCELLANEOUS**

This MOU shall be governed by the laws, regulations, and international treaties ratified by the Republic of Ecuador and, in the event of discrepancy, the Spanish language version shall be the controlling document.

Neither party shall have the authority to make any statements, representations, or commitments of any kind, or to take any action, that shall be binding upon the other party.

This MOU states the whole agreement and understanding of the parties regarding the matter, and supersedes all proposals and agreements, oral or written, regarding the matter.

This MOU may be modified only by written agreement by the authorized representatives of each of the parties. This MOU shall become binding once it has been signed by the parties. Any headings or captions are for purposes of convenience or reference only. All notifications under this MOU may be given at the addresses of the parties as indicated in this MOU.

Neither party shall be responsible to the other party in contract or tort (including negligence) for any indirect, incidental, special, or consequential damages of any nature or for attorney's fees.

This MOU may not be assigned by either party to one of its non-profit scientific affiliates without the written express consent of the other Party, and which must be justified.

The parties agree that this MOU may be released to the World Intellectual Property Organization for inclusion in its collection of sample contractual agreements.

The IBEA shall be contractually obligated to deposit and deliver duplicates of the collected material and information obtained to the Parque Nacional Galápagos, pursuant to Resolution 391 of the Cartagena Agreement.

The IBEA undertakes to submit the results of the research to the MAE first, before these are made public.

The IBEA undertakes to transfer the information related to the objective of this MOU to the MAE and the Parque Nacional Galápagos technicians.

The IBEA undertakes not to misuse the samples in its custody, declaring them to be the property of the state of Ecuador, and authorized only for non-commercial scientific research.

## **9. ADDRESSES**

All future correspondence for the Ministry of the Environment shall be received at its address located at Av. Eloy Alfaro y Amazonas, Edificio Ministerio de Agricultura, 7 y 8 piso, Quito, Ecuador.

All future correspondence for The Institute for Biological Energy Alternatives shall be received at its address located at 1901 Research Blvd., Sixth Floor, Rockville, Maryland 20850, U.S.A.

## **10. DISPUTES**

The parties shall attempt in good faith to promptly resolve any dispute arising from the application of this MOU through direct negotiations by their representatives, who have the authority to settle any difficulty that might occur during the execution of this document, taking into account the applicable legal framework. If no solution were to be reached, the parties shall submit to the legal arbitration process before the Ecuadorian-American Chamber, headquartered in the city of Quito, Ecuador, pursuant to that established in the Arbitration and Mediation Law of Ecuador and the regulations of said Chamber.

In witness whereof, the parties sign this MOU, on the original and three copies of equal value, in the city of Quito, on the fifteenth day of the month of March, 2004.

**By: Ministry of the Environment (Ministerio del Ambiente – “the MAE”)**

Dr. Fabián Valdivieso E.  
Minister of the Environment

**By: The Institute for Biological Energy Alternatives (“the IBEA”)**

J. Craig Venter, PhD  
Executive President