



An overview of country experiences with NBF development projects in Asia

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Dr. Nizar Mohamed - Regional Coordinator for Asia & Pacific. UNEP, Switzerland.

The future potential of biotechnology and the importance of biosafety have been recognised from the early stages of the development of biotechnology. This is reflected by the interest and commitment demonstrated by Asian countries in the Cartagena Protocol: as of 15 April 2004, 11 countries are Parties to the Protocol, while an additional 8 countries have indicated their commitment by signing the Protocol. The 21 countries in Asia participating in the UNEP-GEF project on development of NBFs are currently at various stages of development of their NBF:

- Eight countries, Democratic Peoples' Republic of Korea, the Republic of Korea, Jordan, Indonesia, Philippines Tajikistan, Kazakhstan and Viet Nam are in the final stages of formulating their regulatory regime (end of Phase 3) of the development of their NBF;
 - Three countries, Cambodia, Iran and Lao PDR, have completed Phase 2 and are moving into the early stages of Phase 3, setting up the regulatory regime and administrative systems for their NBF;
 - Two countries, Mongolia and Sri Lanka, have completed Phase 1 and are carrying out the necessary analysis for deciding the shape of their NBF;
 - Eight countries, Bhutan, Bangladesh, Kyrgyzstan, **Lebanon**, Myanmar, Nepal, Syria, and Yemen, have had their projects approved and are just stating out on the first phase of their NBF project.
- Lebanon has just started the implementation of the NBF project.

Biotechnology

Biotechnology is defined as the application of science and engineering to the direct or indirect use of living organisms or parts of organisms in their natural or modified forms in the production of goods and services.

Biosafety

A term used to describe efforts to reduce and eliminate the potential risks resulting from biotechnology and its products. For the purposes of the Biosafety Protocol, this is based on the precautionary approach, whereby the lack of full scientific certainty should not be used as an excuse to postpone action when there is a threat of serious or irreversible damage.

Lebanon Profile on Biosafety

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Mirs. Diane Klaimi - Biosafety Focal Point, Ministry of Environment, Lebanon.

Lebanon ratified the convention on Biological Diversity in 1994 under law number 360/94. Biosafety is one of the issues addressed by the convention. The Cartagena protocol added by the COP to the convention on biological diversity on 29 January 2000 focused on establishing and maintaining means to regulate, manage or control the risks associated with the use release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health. As a result, Lebanon joined efforts to develop a draft protocol on Biosafety, which is a binding international instrument related to the treaty.

At the national level, the Ministry of Environment (MoE), is the appointed National Executing Agency of the project on Biosafety. Presently, Lebanon may be considered in phase 1 of the Development Project on National Biosafety Frameworks, which is concerned with the gathering of baseline information for surveys and inventories. Lebanon will be assisted by the UNEP/GEF project in developing the necessary regulatory regime for Biosafety. During the last decade, only one scientific meeting on biotechnology and technology transfer has been held in Beirut in 1997. This meeting was of great relevance to the region and provided insight to the available technologies as well as technologies most appropriate to the countries of the region.

However, most universities and research institutions in Lebanon are dealing with agriculture genetic engineering at a broad theoretical level and a narrow practical level, especially in tissue culture techniques to improve plant propagation and multiplication of major horticultural crops, cereal crops, and fruit trees, and as a tool to facilitate conventional methods of disease-free and improved nutrition plant breeding as well as the production of resistant varieties to adverse weather conditions.

At the international level, despite the fact that Lebanon has participated in seven group meetings and negotiations of the Cartagena Protocol on Biosafety and has played among others an active role for the adoption of the Protocol, Lebanon is not a signatory of the Protocol yet, even though the ratification process is now in progress. Lebanon is in the process of acceding the World Trade Organization (WTO) and follows regulations of the Phytosanitary control to meet requirements of importing countries. Also, Lebanon is a potential member of the EU-Mediterranean Plant Protection Organization (EPPO).

Source: Miss. Lara Samaha - CBD Focal Point, Ministry of Environment, Lebanon.



Introduction to the Cartagena Protocol

The first legally-binding international treaty governing shipments and trade of Genetically Modified (GM) and Living Modified Organisms (LMOs) resulting from modern biotechnology is the Cartagena Protocol which was agreed in 2000. The treaty is part of the Convention on Biological Diversity (CBD) and it was adopted by more than 130 countries after five years of negotiation. It entered into force on September 11, 2003. To date, in addition to the European Union, fifty seven countries have ratified the protocol.

The Protocol aims to contribute to the safe transfer, handling, and use of LMOs resulting from modern biotechnology that may have adverse effects on conservation and sustainable use of biological diversity. It also takes into account risks to human health and their socio-economic impacts specifically focusing on transboundary movements.

The heart of the treaty is the establishment of a procedure called Advanced Informed Agreement (AIA).

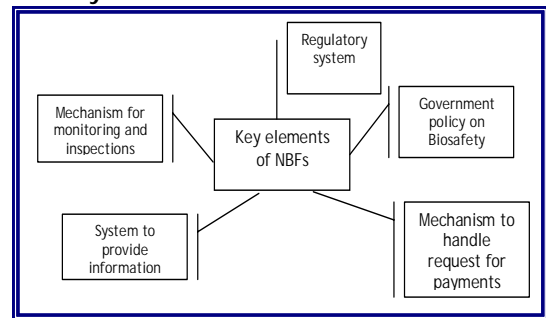
The entry into force of the Protocol implies first to be a Party to the CBD, a compliance with the Protocol provisions and a legal binding in the international legal system and in the legal systems of States that have given consent to be bound by it. The UNDP/UNEP-GEF project on the Development of National Biosafety Frameworks (NBFs) is one of the main components for the entry into force of the Cartagena Protocol on Biosafety.

Upon entry into force, a number of provisions of the Protocol has to take effect immediately among which the necessary and appropriate legal, administrative and other measures to implement the protocol. **For complete information on the Biosafety Protocol, please consult:** <http://www.biodiv.org/biosafety/>



Steps towards the Development of a NBF

Methodology to develop NBF has been developed by UNEP-GEF Biosafety units and the **key elements** include:



For more information, go to: <http://www.unep.ch/biosafety>



What is risk assessment?

Risk assessment is the systematic, scientific characterization of potential adverse effects of human or ecological exposures to hazardous agents or activities

What is risk management?

Risk management is the process of identifying, evaluating, selecting, and implementing actions to reduce risk to human health and to ecosystems.

Overview on LMOs & GM crops

Sources: *World Resource Institute, 2003*
Agriculture & Biotechnology Strategies, 2002

Worldwide studies indicate that more than half of the world's population lives in countries where GM or transgenic crops are approved and grown. Since they were first introduced in 1996, the global area planted by these crops increased from 1.7 million hectares to 58.7 million hectares by the year 2002. This ranks as one of the highest rates of adoption of new crop technologies. The principal transgenic crops are soybean occupying 62 % of the global area, corn (21%), cotton (12%), and canola (5%).

LMOs form the basis of a range of products and agricultural commodities. Processed products containing dead modified organisms or non-living GMO components include certain vaccines; drugs; food additives; and many processed, canned, and preserved foods. They can also include corn and soybean derivatives used in many foods and nonfoods, cornstarch used for cardboard and adhesives, fuel ethanol for gasoline, vitamins, vaccines and pharmaceuticals, and yeast-based foods such as beer and bread.

List of GM Crops and related countries of approval of GMOs released:

Crops	Countries
Corn	Argentina, Australia, NZ, Canada, China, EU, Japan, South Africa, Switzerland, USA, Bulgaria, Russia
Rice	Japan
Wheat	Canada
Soybean	Argentina, Canada, Japan, Russia, South Africa, USA, Australia, NZ, EU, Korea, Mexico, Poland, Romania, Switzerland, Thailand, Uruguay
Cotton	Argentina, Australia, NZ, Canada, Japan, EU, South Africa, USA
Potato	Australia, NZ, Canada, USA, Japan, Romania
Squash	Canada, USA
Tomato	Japan, Canada, USA, China, Mexico
Tobacco	USA
Sugar beet	Australia, NZ, USA, Canada, Japan, Russia



Group of IBSAR and respective field of research

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Riad Baalbaki, PhD Characterization of plant genetic resources & Applied Statistics
Dima Jamali, PhD Policy and Administration
Hala Mohtasseb, PhD. Molecular Biology
Walid Nasser, Attorney Property Rights
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Rabih Talhouk, PhD Cell & Molecular Biologist
Salma N. Talhouk, PhD Biodiversity Conservation

NBF project for Lebanon

The development of NBF project for Lebanon has been contracted to the **Initiative on Biodiversity Studies in Arid Regions (IBSAR)** at the American University of Beirut by the MOE, the implementing agency through the UNDP. **A group of experts from IBSAR** will be working in close collaboration with the Biosafety Focal Point at the MOE and will seek national participation and consensus to develop a NBF for Lebanon including procedures for the safe application of biotechnology in accordance with administrative, legislative, risk assessment and public participation systems.

The project main activities are:

- Survey, analysis and creation of national database relevant to biotechnology, biosafety issues including legislation
- Establishment of a National Coordinating Committee (NCC)
- Storage and management of gathered information to promote public participation
- Creation of a database listing national experts in fields related to biotechnology and biosafety, risk assessment and risk management of LMOs
- Organization of national workshops to initiate public participation targeted to relevant stakeholders including public and private sectors and national legislators for awareness purposes
- Production of public awareness materials and publishing of inventories and guidelines.



The Initiative for Biodiversity Studies in Arid Regions is led by a multidisciplinary group of researchers who recognize biodiversity as a regional asset. Website: <http://www.aub.edu/~webibsar/>

IBSAR strives to be a leading national and regional research organization integrating biodiversity in all sectors of the society.

IBSAR's mission is to launch activities in research, development, training, and information exchange to promote biodiversity conservation in arid regions. IBSAR intends to generate and disseminate knowledge using state of the art technology and expertise, provide consultancy service and attract investments in novel biodiversity.

Where we are now: Surveys initiated

In February 2004, the first phase of the NBF project commenced with the design of surveys to collect information on existing legislations, current status of biotechnology, existing capacity building programmes and regional mechanisms for harmonization. This information will constitute the building blocks of a national biosafety database and will contribute towards the development of a roster of national experts.

The designed surveys (English and Arabic versions) seek to unveil:

- Current status of biotechnology and the arrangements for its safe use
- National, bilateral and multilateral cooperative programs in capacity building, research and development and application of biotechnology
- Existing mechanisms for harmonization of risk assessment and risk management, mutual acceptance of data and data validation
- Extent and impact of release of LMOs and commercial products.
- Questionnaire forms were distributed to stakeholders in various sectors including agribusiness companies, food industry, non-governmental agencies, hospitals, ministries, universities, syndicates and private sector. The number of the targeted people will be regularly updated for a maximum outreach.

The data collected in the surveys will be analyzed and the results will be shared with all stakeholders through the organization of a national workshop to be held at the end of the first phase of the project.



Participate in the decision making process of the development of the National Biosafety Framework for Lebanon: [Become a project member!](#)

Membership Information:

Name: _____

Institution: _____

Address: _____

Postal Code: _____

Daytime phone: _____

E-mail: _____

In my opinion the following individual/institution should become an NBFP@Lebanon project member please contact him/her:

Name: _____

Phone/email: _____

For further information, do not hesitate to contact the MOE website at: <http://www.moe.gov.lb>

Further Readings

Cartagena Protocol on Biosafety to the convention on Biological diversity. Text and Annexes.

IUCN Environmental Policy and Law paper. An explanatory guide to Cartagena Protocol on Biosafety.

AgBiosafety: a source of scientific, regulatory and educational materials relevant to crop biotechnology and the genetic modification of food from University of Nebraska:

<http://agbiosafety.unl.edu/index.htm>

Biotechnology in food and agriculture, GM foods and crops provided by FAO:

<http://www.fao.org/biotech/index.asp?lang=en>

A good source for biosafety resources on the Internet provided by CBD secretariat:

http://www.jiwlp.com/contents/biosafety_resources_net.html

A Consultation Document on Cartagena Protocol on Biosafety provided by the government of Canada:

<http://www.bco.ec.gc.ca/Protocol/en/protocol.cfm>

The Biosafety Information Network and Advisory Service (BINAS) monitors global developments in regulatory issues in biotechnology:

<http://binas.unido.org/binas/>

FOR FURTHER INFORMATION

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Membership benefits and services include:

- NBFP@Lebanon newsletter, a semestrial bulletin for the project duration,
- Directory of all Members, persons and institutions involved in the development of NBF,
- Forum for regular Exchange of information and opinions through the newsletter and the list-server,
- Member internet Information Service on all biosafety related news,
- Invitations to all national events and workshops.