

# BIOSAFETY PROTOCOL NEWS

MARCH 2011 • Issue 8

*SPECIAL FOCUS*

## Working towards a common goal:

Ten years of international cooperation on  
implementation of the Cartagena Protocol on Biosafety



A MAGAZINE ON THE  
CARTAGENA PROTOCOL  
ON BIOSAFETY

Secretariat of the Convention on Biological Diversity

# BIOSAFETY PROTOCOL NEWS

MARCH 2011 • Issue 8

**Director of Publications**

Ahmed Djoghlaif  
Executive Secretary

**Editors**

Andrew Bowers, [andrew.bowers@cbd.int](mailto:andrew.bowers@cbd.int)  
John Fry, [john.fry@cbd.int](mailto:john.fry@cbd.int)  
Charles Gbedemah, [charles.gbedemah@cbd.int](mailto:charles.gbedemah@cbd.int)  
Johan Hedlund, [johan.hedlund@cbd.int](mailto:johan.hedlund@cbd.int)  
Ulrika Nilsson, [ulrika.nilsson@cbd.int](mailto:ulrika.nilsson@cbd.int)  
Erie Tamale, [erie.tamale@cbd.int](mailto:erie.tamale@cbd.int)

**Acknowledgements:**

Ezra Clark  
Tea García-Huidobro  
Andreas Heissenberger  
Diran Makinde  
Bryan Muñoz Castillo  
Decio M. Ripandelli  
Ranjini Warriier  
Kazuo Watanabe

**Archive**

[http://bch.cbd.int/protocol/cpb\\_newsletter.shtml](http://bch.cbd.int/protocol/cpb_newsletter.shtml)

**Disclaimer**

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Convention on Biological Diversity concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The views expressed in this publication are those of the authors and do not necessarily reflect those of the Secretariat, nor does citing of trade names or commercial processes constitute endorsement.

Comments and suggestions for future columns are welcome and should be addressed to the editors.

Cover image: Hemera/Thinkstock

Secretariat of the Convention on Biological Diversity  
413 Rue St. Jacques, Suite 800  
Montréal, Québec, H2Y 1N9 Canada  
Tel. +1 514 288 2220 / Fax: +1 514 288 6588  
[www.cbd.int](http://www.cbd.int)  
[secretariat@cbd.int](mailto:secretariat@cbd.int)  
© 2011 — All rights reserved.



Convention on  
Biological Diversity

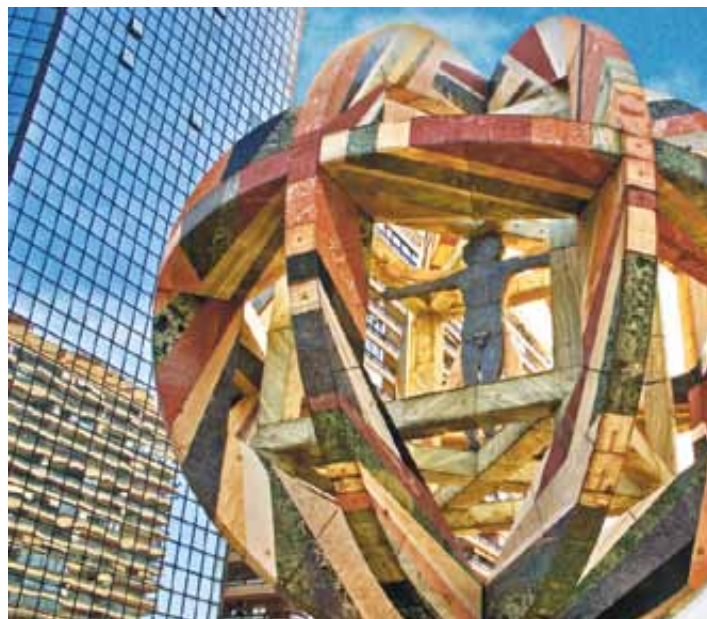


Printed on Rolland Enviro100, which contains 100% recycled post-consumer fibre, is EcoLogo, Processed Chlorine Free and manufactured using biogas energy.



## 12 Regional cooperation in the field of biosafety education and training

by Kazuo Watanabe



## 18 Joining hands in sharing scientific information on LMOS

by Decio M. Ripandelli





- 4 **Working towards a common goal**  
TEN YEARS OF INTERNATIONAL COOPERATION ON THE IMPLEMENTATION OF THE CARTAGENA PROTOCOL ON BIOSAFETY  
by Ahmed Djoghlaif
- 6 **The Biosafety Protocol in action**  
IMPLEMENTATION EXPERIENCE AND LESSONS LEARNED FROM THE ASIA-PACIFIC REGION  
by Ranjini Warriier
- 8 **The Biosafety Protocol in action**  
IMPLEMENTATION EXPERIENCE AND LESSONS LEARNED FROM THE LATIN AMERICA AND THE CARIBBEAN REGION  
by Tea García-Huidobro
- 10 **Mobilizing local biosafety expertise and resources through regional cooperation**  
EXPERIENCE OF THE AFRICAN BIOSAFETY EXPERTISE NETWORK  
by Diran Makinde
- 12 **Regional cooperation in the field of biosafety education and training**  
EMERGING EXPERIENCES FROM THE ASIAN BIOSAFETY EDUCATION NETWORK (ABEN)  
by Kazuo Watanabe
- 14 **Fostering regional cooperation in biosafety capacity-building across the Americas**  
EXPERIENCE OF THE INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE  
by Bryan Muñoz
- 16 **Cooperating to prevent illegal trade of environmentally-sensitive commodities**  
EXPERIENCES AND LESSONS LEARNED FROM THE GREEN CUSTOMS INITIATIVE  
by Ezra Clark
- 18 **Joining hands in sharing scientific information on living modified organisms**  
EXPERIENCES OF COOPERATION BETWEEN THE INTERNATIONAL CENTRE FOR GENETIC ENGINEERING AND BIOTECHNOLOGY AND THE SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY  
by Decio M. Ripandelli
- 20 **Beyond the 10th anniversary**  
ADOPTING A STRATEGIC APPROACH TO THE IMPLEMENTATION OF THE CARTAGENA PROTOCOL ON BIOSAFETY  
by Andreas Heissenberger
- 23 **Useful information**  
NEW PUBLICATIONS  
NEW WEB PAGES  
USEFUL LINKS
- 24 **Recent and upcoming biosafety events**  
RECENT MEETINGS  
UPCOMING MEETINGS

# Working towards a common goal

TEN YEARS OF INTERNATIONAL COOPERATION ON THE IMPLEMENTATION OF THE CARTAGENA PROTOCOL ON BIOSAFETY

by **Ahmed Djoghlaif** ●

Executive Secretary of the Convention on Biological Diversity

The year 2010 marked the tenth anniversary of the adoption of the Cartagena Protocol on Biosafety, an additional agreement to the Convention on Biological Diversity. The year 2010 was also declared the International Year of Biodiversity (IYB) by the United Nations to celebrate life on Earth and increase the understanding of the value of biodiversity in our lives. These two celebrations served to focus attention on the importance of international cooperation in confronting common problems and combining the efforts of various stakeholders in building a sustainable future.

The world today faces unprecedented challenges ranging from biodiversity loss and environmental degradation to poverty, food insecurity and economic slowdown. These challenges cannot be resolved by any one single country. They require international cooperation at various levels—multilateral, regional, subregional or bilateral levels.

The Cartagena Protocol, in a number of its provisions, calls for cooperation among Parties to facilitate its effective implementation. For example, Parties are required to cooperate in identifying LMOs that may have adverse effects on biodiversity and in taking appropriate measures regarding the treatment of such LMOs. They are also required to cooperate in the development and/or strengthening of human resources and institutional capacities in biosafety and in the promotion of public awareness, education and participation concerning the safe transfer, handling and use of LMOs. Furthermore, Parties are encouraged to cooperate on research and information exchange on socio-economic impacts of LMOs.

This eighth issue of the *Biosafety Protocol News* highlights examples of cooperation among Parties and relevant organizations in the implementation of the Protocol over the last 10 years. It features eight articles on experiences and lessons learned from the regions of Africa, Asia and the Pacific and Latin America and the Caribbean and from global initiatives undertaken by institutions that are working towards ensuring the safe transfer, handling and use of LMOs. A number of Parties, and international and regional institutions, have cooperated on a wide-range of issues and initiatives including capacity-building and training, public awareness and education, biosafety-information management and exchange and the development and implementation of biosafety regulatory frameworks.



The articles by Ranjini Warriar and Tea Garcia Huidobro describe the experiences in implementing the Protocol of Parties in the Asia and the Pacific region and the Latin America and the Caribbean region, respectively. Both articles note that implementation of the Protocol to date has been slow due to the complexity of issues involved and a lack of resources and capacities in most countries. They call for greater regional cooperation and coordinated capacity-building efforts.

Similarly, the articles by Diran Makinde, Bryan Munoz and Kazuo Watanabe emphasize the need for a regional approach (rather than a country-by-country approach) to capacity building in order to maximize the use of resources and foster sustainability. Ezra Clark and Decio Ripandelli describe good practice examples of how cooperation between international organizations and the secretariats of multilateral environmental agreements has resulted in the cost-effective delivery of training and wider access to information and resource materials.

Finally, the article by Andreas Heissenberger underscores the need to adopt a strategic approach to the implementation of the Protocol. He states that it is important to establish meaningful goals, prioritize activities to meet those goals and define clear milestones and indicators to measure progress.

All of the articles in this issue demonstrate that there is a need to strengthen cooperation at the international, regional and national levels and to foster partnerships between various stakeholders in order to advance implementation of the Protocol. Governments and all other stakeholders, from civil society to the private sector, need to collaborate in order to achieve the common goal of ensuring the safe transfer, handling and use of LMOs.

I take this opportunity to thank all of the authors who have contributed articles to this issue. It is my hope that the experiences shared through this issue will inspire more cooperation and lead to the successful and effective implementation of the Protocol.



# The Biosafety Protocol in action

## IMPLEMENTATION EXPERIENCE AND LESSONS LEARNED FROM THE ASIA-PACIFIC REGION

by **Ranjini Warriar** • Dr. Ranjini Warriar is the Biosafety Clearing-House Focal Point for India. She can be contacted at: warrier@nic.in.

The Cartagena Protocol on Biosafety, the first legally binding international regulatory framework for the safe transfer, handling and use of living modified organisms (LMOs) which came into force on 11 September 2003 is an important international treaty particularly for developing countries. To date, 160 countries have ratified the Protocol of which 41 are from the Asia-Pacific region.

When the Protocol came into force, there was a shift from a commitment phase to an implementation phase. The implementation phase of the Protocol gained momentum with the adoption of a medium-term programme of work at the first meeting of the Conference of the Parties serving as the meeting of Parties (COP-MOP 1) in Kuala Lumpur, Malaysia, in 2004.

The medium-term programme of work focused on (i) assisting Parties to put into place a National Biosafety Framework (NBF) through capacity-building initiatives and information sharing through the Biosafety Clearing-House (BCH); (ii) putting into place mechanisms to facilitate implementation of key articles of the Protocol, in particular Article 18 (Handling, Packaging, Identification and Documentation), Article 27 (Liability and Redress) and Article 33 (Compliance) and (iii) providing guidance on implementation of articles relating to risk assessment and management, public awareness and participation and socio-economic considerations. To date, 72 substantive decisions have been adopted during the five meetings of the COP-MOP.

The first and foremost step towards meeting the obligations of Parties under the Protocol is to have functional NBFs. Before the adoption of the Protocol in 2000, some countries in the Asia-Pacific region had initiated legislative measures to manage the potential risks associated with Living Modified Organisms (LMOs) and products derived from them. For example, India enacted the "Environment (Protection) Act" in 1986 and published a series of rules to regulate and manage risks to the environment by various substances, including LMOs. Also, in 1990, the "Philippines Executive Order 430" was issued which led to the establishment of the National Committee on Biosafety of the Philippines (NCBP). Furthermore, during the early 1990s, India and Thailand published the first guidelines on research and environmental release of LMOs.

After signing the Protocol, some countries in the Asia-Pacific region took steps to establish their regulatory systems, Twenty-

nine countries in the region benefited from the financial and technical support provided by the United Nations Environment Programme - Global Environment Facility (UNEP-GEF) project to develop their NBFs. However, these NBFs are at various stages of implementation. In total, to date, 45 countries in the region, including four non-Parties, have developed NBFs. Therefore, encouraging progress has been made towards the establishment of biosafety regulatory systems in the Asia-Pacific region.

The region also significantly benefited from the UNEP-GEF project on "Building Capacity for Effective Participation in the Biosafety Clearing House (BCH)". This project aimed to assist countries to comply with the information-sharing mechanism under Article 20 of the Protocol. Furthermore, a number of countries in the region participated in the Food and Agricultural Organization (FAO) project on capacity-building in biosafety of genetically modified (GM) crops in Asia. It also benefited from regional risk assessment training workshops organized by the CBD Secretariat and other organizations such as the International Centre for Genetic Engineering and Biotechnology (ICGEB) and the Program for Biosafety Systems funded by USAID.

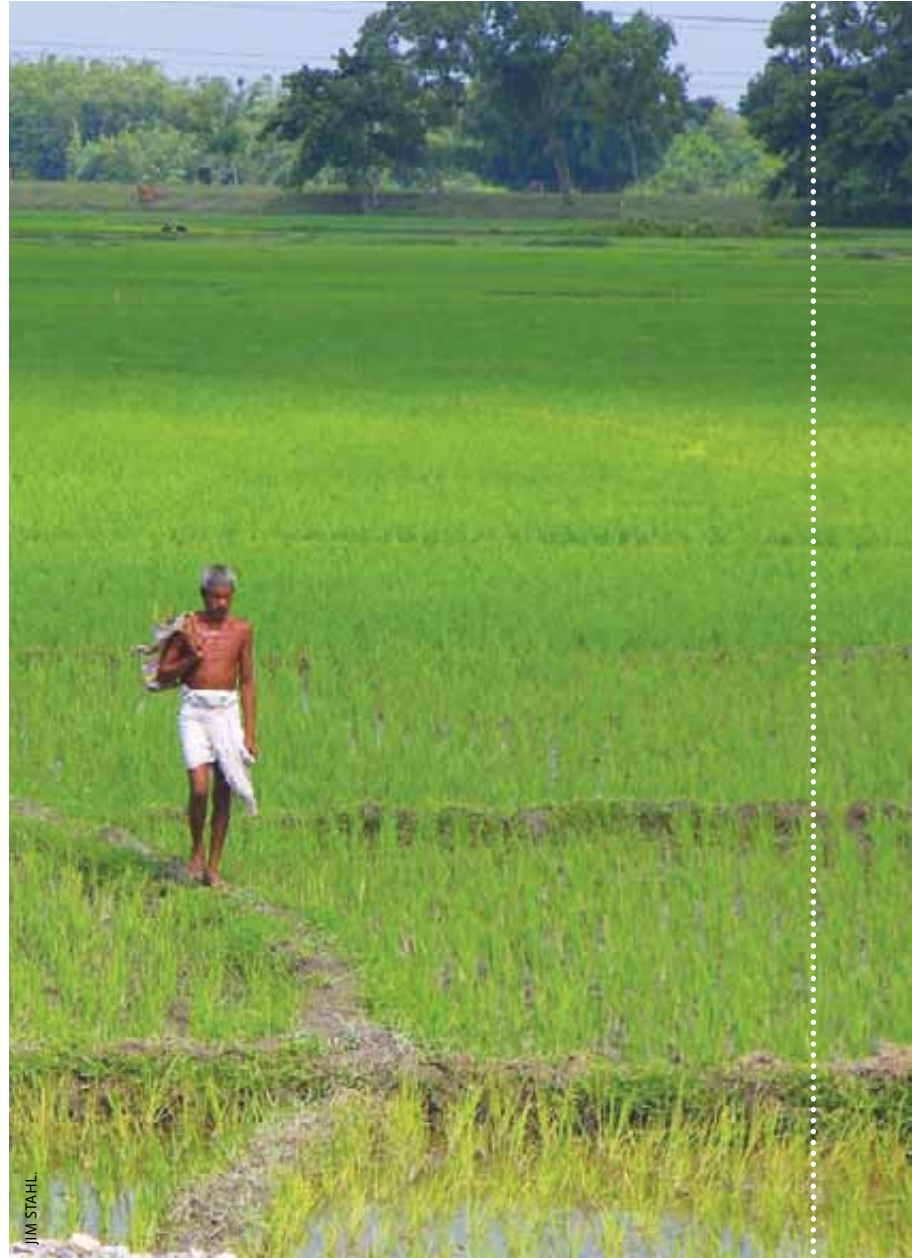
However, 15 years since the release of the first GM crop and 10 years after the adoption of the Cartagena Protocol, there is much heterogeneity in terms of the capacity to regulate LMOs across countries in the region. In general, the countries of the Asia-Pacific region have adopted a cautious approach to open field cultivation of GM crops. A majority of the biotechnology research initiatives are still at the laboratory or greenhouse stage. Others have reached the field testing stage. According to the report produced by the International Service for the Acquisition of Agri-Biotech Applications (ISAAA) in 2009, the global area cultivating GM crops has increased from 1.7 million hectares in 1996 to approximately 134 million hectares in 2009. This highlights the growing volume in agricultural LMO trade. However, the level of preparedness in handling bulk import/export of LMOs in the region is still limited. Therefore, it is important that over the next decade, a focus is put on accelerating the implementation of the Cartagena Protocol to ensure effective compliance with its regulations.

Based on the experiences from countries in the Asia-Pacific region, the following issues need to be considered in order to effectively address the key challenges regarding the promotion of greater compliance:

1. Biosafety regulations need to be harmonized with the scientific developments in the area of biotechnology and biosafety. Since experience in addressing biosafety issues is still limited in the region, regulatory norms should evolve over time as countries learn from local and international experiences. In this regard, it is imperative to develop a well-trained body of human resources with adequate knowledge, skills and experience in respective areas of biosafety management.

2. The BCH needs to be strengthened and populated with accurate and complete information from the Parties. To ensure effective utilization of the BCH, practical difficulties faced by countries in the region, such as a lack of trained personnel and infrastructure as well as a lack of clarity on the nature of information to be provided need to be addressed.
3. Article 18, paragraph 2 (a) of the Protocol is key in determining the effectiveness and successful implementation of the Protocol due to its trade-related obligations. Obligations under the historical 'Curitiba Rules' are several. Countries in the region would require considerable capacity-building support in order to fulfill them. For example, phasing out the 'may contain' language in the Article would require Parties to put in place Infrastructure for identity preservation systems, mechanisms to support changes in agricultural practices, specialized systems for handling grain and systems for labeling and traceability. On the other hand, continuing with the 'may contain' language would require establishing thresholds and infrastructure for LMO detection (particularly at the port of entry), development of sampling strategies for LMO detection and the establishment of an LMO laboratory referral system.
4. Parties would have to address issues related to the harmonization of custom procedures in the region and the conflicts between the obligations of free trade under the World Trade Organization (WTO) and environmental safety based on the Protocol's "precautionary approach".
5. Human resource development and institutional strengthening regarding (i) LMO detection and (ii) the development of infrastructure for handling bulk LMOs are considered the most important factors. Although most countries in the region do not have proper facilities or experience to perform LMO sampling and detection, such facilities do exist in some countries. Promoting regional cooperation to build capacity in this area would be cost-effective.
6. Many countries have experienced difficulties in meeting their national reporting obligations under the Protocol. In some cases, this has been due to the unavailability of information and limited experience in the export/import of LMOs. However, often it is due to a lack of capacity to synthesise the available information from several national agencies. Support for developing and managing technical information on biotechnology and biosafety would assist Parties in meeting their reporting requirements.

In conclusion, even though progress in the region in implementing the obligations set out under the Protocol is slow due to the complexity of the issues involved and the factors outlined above, many countries have begun moving in the right direction. The immediate need is to promote compliance through various focussed capacity-building initiatives, including strengthening information management systems and the establishment of LMO documentation systems. These systems need to be harmonized with the custom procedures at the regional level. There is also



JIM STAHL

It is important that over the next decade, a focus is put on accelerating the implementation of the Cartagena Protocol to ensure effective compliance with its regulations.

an urgent need to establish LMO laboratory facilities (referral accredited laboratories) and development of skills and protocols for LMO detection. Furthermore, it is imperative to strengthen financial mechanisms both at the national and regional level. The safe transfer, handling and use of GM commodities in the Asia-Pacific region calls for greater regional cooperation and coordinated capacity-building initiatives.

# The Biosafety Protocol in action

## IMPLEMENTATION EXPERIENCE AND LESSONS LEARNED FROM THE LATIN AMERICA AND THE CARIBBEAN REGION

by **Tea García-Huidobro** ● Ms. Tea García-Huidobro is a Task Manager for the Division of the Global Environment Facility (GEF) Coordination at the Regional Office, United Nations Environment Programme, in Panama. She can be contacted at: [tea.garciahuidobro@pnuma.org](mailto:tea.garciahuidobro@pnuma.org).

It's been more than 10 years since the Cartagena Protocol on Biosafety was born. Since then, many countries from the Latin American and Caribbean (LAC) region have ratified it and embarked on its implementation. Out of the 33 countries in the LAC region, 28 are now Parties<sup>1</sup> to the Protocol and 26 have developed National Biosafety Frameworks (NBFs) with support from the United Nations Environment Programme – Global Environment Facility (UNEP-GEF) project. As the first global capacity-building effort of its kind, the UNEP-GEF project was instrumental in putting biosafety issues in the spotlight and in addressing some of the critical needs of the participating countries.

As the Cartagena Protocol matures, LAC countries remain committed to turning words into action. Many of them know what is missing and are looking to address the gaps to better implement the Protocol. A number of them have received applications for import of, and/or research on, living modified organisms (LMOs) and have been working to improve their regulatory frameworks, expand and streamline their institutional systems and strengthen coordination among various sectors.

However, many countries in the region require training of human resources in a number of fields, including training in how to address border control issues. Many others also need to con-

sider biosafety operations in the context of broad national or regional drivers such as economic and political integration among Caribbean states or Free Trade Agreements with non-Party LMO producers or with LMO-stringent Parties. Many are analyzing the economic and legal implications of the Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety in case of damage from the use of LMOs.

Although LAC countries have made efforts to invest in the development of NBFs, progress has been slow with their operationalization. This has been so due to a number of reasons including changes of Government and high staff turnover rates. Another reason is the dynamic nature of biotechnology itself, which somehow turns the biosafety finishing-line into a moving target. Once a country has experimented with specific LMO crops and gained experience in assessing and managing their risks it often finds itself (and its biosafety regulations) confronted with new types of LMOs such as genetically modified (GM) mosquitoes or fish. Indeed, the rapid expansion of modern biotechnology has been overwhelming to some countries.

A number of other factors and scenarios have contributed to the slow progress and to the fact that in some countries few biosafety decisions have been made to date. The scenarios include the following:

1. Illegal transboundary movements or environmental releases of LMOs by local farmers who are unaware of, and culturally disassociated from, such illegality;
2. Research institutes wanting to apply for field testing of locally-developed LMOs when the national regulatory framework for LMOs was developed on the assumption that LMOs would be entering the country as foreign varieties developed in foreign climates by foreign companies;
3. Detection of unauthorized LMOs when regulatory authorities only have access to data on approved LMOs; and
4. Environmental release of an LMO species with strong socio-economic and cultural significance (such as corn) when the country is a centre of origin or diversity for that species.

In view of the biological and cultural diversity of LAC countries, the above scenarios raise serious and complicated issues that call for the establishment of comprehensive biosafety frameworks. However, comprehensive frameworks can, in practice, be difficult to implement. In an attempt to address and accommodate all of these issues, NBFs run the danger of collapsing under their own weight. On the other hand, if designed in isolation from other sectoral or development policies, or without the involvement of affected user groups, NBFs might have inconsistencies or inefficiencies—e.g. restricting GM research while promoting the development of biotechnology or creating de novo bureaucracies rather than exploiting existing channels to streamline administrative processes.



COMSTOCK/THINKSTOCK



The common hurdle facing most LAC countries is establishing supplementary regulations to operationalize biosafety laws. Many of them have developed the overarching regulatory framework but this has proven less challenging than devising the sectoral details required for implementation. This has resulted in slow-moving approvals and, more importantly in terms of impact, a growing number of cases of “GM contamination” in a number of LAC countries.

A recent study by the STEPS Centre<sup>2</sup> pointed to an implementation deficit that was as much due to capacity gaps as it was to issues of regulatory design. This study noted that biosafety regulations principally framed around commercial agriculture (ie. concerned with formal market players) were being used to assess the extent to which uncertified GM seeds flow through informal supply channels and reach the environment unregulated. In fact, a large number of small farmers in LAC countries rely on the informal exchange of seed varieties (unauthorized and uncertified) and often use grain as seed. The study concluded that policy responses needed to be more adaptive and sensitive to realities on the ground. Biosafety should be less about overall governance and more about its manifestation at the local level. Regulators need to understand the means and reasons for which LMOs are introduced into different productive systems if biosafety regulatory systems are to be more effective.

Another hurdle facing LAC countries is the lack of technical capacity. Many countries in the region do not have the in-house expertise needed to carry out biosafety evaluations (including risk assessments and socio-economic impact analyses) for first-time LMO introductions. If decisions are to be based on ‘home-made’ evaluations, regulators and advisors need to be familiar with, and agree on, the scientific methods and minimum data requirements. The region, given the common language, culture and shared ecosystems, has a great potential to tap into regional expertise and adopt a regional approach to biosafety evaluations across a number of countries.

Few LAC countries have begun establishing rules concerning LMO identification and documentation. Most national efforts are still focused on consolidating the working relationship between the various sectors involved in biosafety, including customs or animal health officials. Although some Governments have cultivated good linkages with the private and research sectors, these relationships are still developing. More effort is still needed to foster greater trust, transparency and collaboration among these sectors.

In order to overcome the hurdles described above, 12 Caribbean and 9 Latin American countries have requested for project funding from the Global Environment Facility (GEF) through UNEP or the World Bank to implement their NBFs. The projects are aimed at: (i) developing local technical capacity and bringing science closer to decision-making and (ii) further strengthening institutional capacities. This round of NBF implementation projects began in 2010.



## Many countries in the region need to consider biosafety operations in the context of broad national or regional drivers such as economic and political integration.

In the area of information management, the Biosafety Clearing House (BCH) has evolved into a user-friendly tool that many countries are looking to mirror via national nodes. However, some of the countries in the region have not yet fully taken advantage of the BCH. The first global UNEP-GEF project for facilitating participation in the BCH was effective but insufficient. This explains why two thirds of LAC countries have applied to participate in the second BCH global project.

From the above, it is evident that despite the progress made, operationalizing the NBFs in LAC countries is still a work in progress. It is also obvious that future implementation of the NBFs will depend on availability of GEF support. Through the GEF-funded NBF implementation projects, it is expected that countries in the region will learn through practice and acquire the necessary experience in biosafety gradually. A step-by-step and case-by-case approach will allow countries to progress from field trials, using widely studied LMOs, to approvals for commercialization and human consumption of novel LMO types.

<sup>1</sup> Eleven of these Parties are from the Caribbean countries and 17 of these Parties are from Latin America, including Cuba and the Dominican Republic.

<sup>2</sup> <http://www.steps-centre.org/ourresearch/regulation.html>

# Mobilizing local biosafety expertise and resources through regional cooperation

## EXPERIENCE OF THE AFRICAN BIOSAFETY EXPERTISE NETWORK

by **Diran Makinde** ● Mr. Diran Makinde is the Director of the African Biosafety Network of Expertise (ABNE). He can be contacted at [diran.makinde@nepadbiosafety.net](mailto:diran.makinde@nepadbiosafety.net).

The statement made by Jeffery Sachs, in the article entitled “A New Map of the World”, that appeared in *The Economist* of June 24, 2000 is still relevant today. He stated: *“Today’s world is divided not by ideology but by technology. A small part of the globe, accounting for some 15% of the earth’s population, provides nearly all of the world’s technology innovations. A second part, involving perhaps half of the world’s population, is able to adopt these technologies in production and consumption. The remaining part, covering around a third of the world’s population, is technologically disconnected, neither innovating at home nor adopting foreign technologies.”*

Most African countries are technologically disconnected and have limited capacity to generate, acquire, disseminate and use knowledge. They also have little or no surplus capital to make their presence felt in the global market. There is also little by way of investments in innovation. Having recognized this, in 2005 African political leaders came up with a strategy aimed at harnessing science and technology for Africa. They adopted the Africa’s Science and Technology Consolidated Plan of Action (CPA) as a framework for a science and technology agenda. The African Ministerial Council on Science and Technology (AMCOST) also resolved to develop a 20-year biotechnology strategy with specific regional technology goals implemented through Regional Economic Communities (RECs) and regional regulations that promote the application and safe use of modern biotechnology. The AMCOST adopted the co-evolutionary approach whereby the function of regulation is to promote innovation while, at the same time, safeguarding human health and the environment. The resolution also underscored the need for developing systems that balance the goals of “promoting learning and creativity in its widest sense” and at the same time “promoting and protecting public interests”.

Earlier, in the year 2000, the Parties to the Convention on Biological Diversity (CBD) adopted the Cartagena Protocol on Biosafety to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifi-

cally focusing on transboundary movements. However, there is a lag in the development of a governance capacity for biotechnology. This is clearly seen in the current status of National Biosafety Frameworks (NBFs) in Africa. As of now, more than 60 percent of African countries are Parties to the Cartagena Protocol. However, many of those countries have made slow progress towards developing and implementing the key components of their NBFs due to a number of factors including a lack of national policies on biotechnology and laws and regulations on biosafety.

The constraints of both inadequate policies and legal frameworks needed urgent attention and the process should be led primarily by Africans to achieve credibility in the eyes of African governments, African civil society and African people.

Some institutions in Africa have been supporting and conducting research and development (R&D) on biotechnology and biosafety; and/or providing resources and services to national and regional organizations. These include sub-regional and regional organizations such as - ASARECA, CORAF/WECARD, FARA, CILSS, AATF, NPCA, ISAAA and AfricaBio.. International organizations and initiatives such as IFPRI Program for Biosafety Systems, USAID, UNEP-GEF and ICGEB have also been providing biosafety support to African institutions. The UNEP-GEF Biosafety Projects<sup>1</sup>, for example, have supported a number of countries to develop and implement National Biosafety Frameworks (NBFs) and to effectively participate in the Biosafety Clearing House (BCH).

However, the absence of operational NBFs in many countries has weakened the potential impact and sustainability of capacity-building interventions. For example, the knowledge generated by the BCH I project has often not fed into an operational system and there are few opportunities or incentives to utilize the new capacities developed under the project. Furthermore, the momentum generated by projects has had the tendency to lapse shortly after the support provided ends and the institutional memory gradually also declines.<sup>2</sup>

Due to disparities among countries in terms of NBF development and implementation, the country-by-country approach seems to have resulted in fairly insular processes. As a result, there has been a growing emphasis on regional biosafety projects. Recent examples include: the World Bank/GEF/UEMOA project in West Africa aimed to establish regional laboratory services and regulatory harmonization in the UEMOA countries and the CILSS-USAID biosafety programme, also in West Africa.

Despite all the biosafety initiatives in Africa, the development of NBFs has been very slow. This can be attributed to the fact that this is a new area of science that is not yet well understood. Another possible reason is that some decision-makers see bio-

safety as a low priority or even a hypothetical concept. The inability of regulators to evaluate the environmental and food safety risks that might be posed by biotechnology-derived products, thereby causing delays in decision-making processes, is also a possible factor. Another major issue is the unavailability of credible science-based regulatory data and information resources for decision-makers.

In 2008, the Planning and Coordinating Agency (PCA) of the New Partnership for Africa's Development (NEPAD) established the African Biosafety Network of Expertise (ABNE) to address some of the above challenges. A service network owned by African regulators, the ABNE focuses primarily on empowering African regulators (including members of the National Biosafety Committees and Institutional Biosafety Committees and staff of Plant Quarantine Offices), through the provision of various biosafety services. Its sole mandate is to contribute, to the building of functional biosafety systems in Africa. These ABNE activities are meant to complement the efforts of other biosafety initiatives and the development of regulatory processes and their implementation in individual African countries.

Since its inception, the ABNE has made progress in mobilizing experienced personnel and resources on biosafety to address the needs of Africa through regional cooperation. It is providing access to science-based information; assisting in handling and review of biosafety applications; training and capacity-building for regulators in risk analysis; and facilitating networking and interactions among regulators within and between countries. This has served to enhance interactions between regulators and scientists. ABNE services are linked to priority needs identified by regulators. These include information resources, training and education (short courses, study tours, workshops and internships), technical support and consultations and networking and linkages.

Using specific criteria and requirements, the ABNE team, together with the Task Force/Technical Advisory Committee, selected Burkina Faso as the host country for the first node of the network. The criteria included: existence of an enabling regulatory environment for biotechnology and biosafety research and development and a fully operational biosafety regulatory system. Burkina Faso was also selected because it had given approval for commercial production of Bt cotton and is gaining practical experiences with the safe application of biotechnology.

The government of Burkina Faso officially invited African Union-NEPAD Planning and Coordinating Agency (AU-NPCA) to estab-



ISTOCKPHOTO/THINKSTOCK

## ABNE has made progress in mobilizing experienced personnel and resources on biosafety to address the needs of Africa through regional cooperation.

lish the ABNE node in Ouagadougou. The node serves as a focal point for the network and houses the Secretariat of the ABNE. The Secretariat is comprised of core technical and support staff. NPCA-ABNE secured the host country agreement with all the privileges and benefits in February 2010 and was officially launched in April 2010 in Ouagadougou.

The ABNE is working with other initiatives through regional cooperation to create better synergies and have greater impact on biosafety issues in Africa. However, it faces an enormous task. There is a need to cooperate and work together with other partners to achieve the goals of improving livelihoods and food security for the population in the region.

<sup>3</sup> The specific project components include development of frameworks, regional works and sub-regional workshops. Countries have participated in the following UNEP-GEF Biosafety projects:

- UNEP-GEF Pilot Biosafety Enabling Activity Project: a project which ran in 18 countries from 1997 until 2000, further to GEF Council approval. Ten of these were African countries (Cameroon, Egypt, Kenya, Malawi, Mauritania, Mauritius, Namibia, Tunisia, Uganda and Zambia).
- UNEP-GEF Project on Development of National Biosafety Frameworks: started in June 2001, aiming to assist up to 100 countries. In January 2004, the GEF approved additional funding for a further 20 countries. There are currently 123 countries participating in the Development project.
- UNEP-GEF Project on Implementation of National Biosafety Frameworks: started in

December 2002. There are currently 19 countries (eight countries have completed the project) participating in the Project, including 4 African countries (Cameroon, Kenya, Namibia and Uganda), participating in the project and are being coordinated variously by the World Bank, UNDP, and UNEP.

- BCH Capacity Building Project: received final clearance in March 2004 and currently has 139 eligible countries, 123 countries completed their project.
- BCH Project for Continued Enhancement of Building Capacity for Effective participation in the BCH: started November 2009 and currently has 50 eligible countries.

<sup>2</sup> Evaluation and Oversight Unit (July 2009) Terminal Evaluation of project GF/6010-04-02 (4771) GFL/2328-2716-4771 – "Building Capacity for Participation in the Biosafety Clearing-House (BCH)" - Phase I: [http://www.unep.org/biosafety/Documents/Workshop\\_Documents/Reports/BCH%20Final%20Evaluation%20Report.doc](http://www.unep.org/biosafety/Documents/Workshop_Documents/Reports/BCH%20Final%20Evaluation%20Report.doc)

# Regional cooperation in the field of biosafety education and training

## EMERGING EXPERIENCES FROM THE ASIAN BIOSAFETY EDUCATION NETWORK (ABEN)

by **Kazuo Watanabe** ● Dr. Kazuo Watanabe is a Research Professor at the Gene Research Center, University of Tsukuba, Japan. He can be contacted at nabechanknw@gmail.com.

Professors from academic institutions and researchers from public agencies in Asia met at the University of Tsukuba (UT), Japan from 31 October to 1 November 2007 to share thoughts on biosafety education and agricultural biotechnology development. This was an independent and informal initiative that followed up on the Second International Meeting of Academic Institutions and other Organizations involved in Biosafety Education and Training that was held in Kuala Lumpur, Malaysia in June 2007.<sup>1</sup>

Participants at the Tsukuba meeting agreed to establish the Asian Biosafety Education Network (ABEN) to foster regional cooperation in the field of biosafety education and training. The goal of the Network is to support human resource development, education and research in biosafety and biotechnology to contribute to the effective implementation of the Protocol. It includes scientists and academics from the public sector in Asian countries including China, India, Indonesia, Iran, Japan, Malaysia, Myanmar, Philippines, Thailand and Vietnam.<sup>2</sup>

To date, two approaches to agricultural biotechnology have been practiced:

1. A regulation-oriented approach which generally relies on rules and regulations to control biotechnology applications, sometimes without broad and fair recognition of the technology or due consideration of its scientific rationale; or
2. A demand-oriented approach which is underpinned by the goal of meeting domestic and international needs to alleviate food security concerns and to improve livelihoods.

The participants noted that, notwithstanding policy, economic and social implications that may arise as the end-point of biotechnology applications, the technology itself is neutral. It is human conduct which dictates the consequences of using the technology and its products. They observed that, as educators, their mission was (i) to provide and promote unbiased scientific understanding of biotechnology and its products and (ii) to develop human resources that are able to make appropriate end-point decisions to ensure the safe application of the technology. Education also focuses on the ethics, legal and social implica-

tions (ELSI) associated with biotechnology. This is intended at enabling stakeholders to have multidisciplinary and participatory discussions and develop a broad understanding of the issues. To alleviate public concerns, the participants further highlighted the need for enhancing knowledge-based human capacity on biotechnology development and its safety.

The Asian Biosafety Education Network (ABEN) provides a useful mechanism for accomplishing the above mandate through regional cooperation. The Network is open to institutions and societies interested in biosafety education and wish to join.

A number of developments have taken place since the ABEN was established in 2007. These include: (i) the development of linkages among academic institutions and individual activities within academic institutions and (ii) the development and implementation of specific international and domestic collaborative research-based biosafety education initiatives.

Specific examples of inter-linkages and intra-linkages and cooperation established among academic institutions include the following:

- (a) The Gene Research Center (GRC) at the University of Tsukuba in its capacity as the ABEN node and as the focal point on biosafety education and research, is collaborating with fifty Japanese national universities on a Plant Transgenic Design Program and is supported by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).<sup>3</sup> The program covers educational research on plant LMOs, emphasizing biosafety aspects such as risk assessment, risk management and communication and LMO product development education. It also involves international research and education aspects.
- (b) The GRC also hosts the Inter-sector Collaboration Committee 178 on transgenic plants under the Japan Society for the Promotion of Science (JSPS). The objective of the Committee is to promote collaboration among academic, public and private sector research institutions.<sup>4</sup>
- (c) The University of Tsukuba together with 12 other Japanese universities, is involved in an international collaborative education initiative, known as in the “Global 30” Project for Establishing Core Universities for Internationalization. This initiative is, aimed at increasing the number of international students educated in Japan as well as Japanese students who are studying abroad.<sup>5</sup> The project was initiated in 2008 by the MEXT. As part of that initiative, the UT has developed a bio-diplomacy course to train leaders to be competitive in policy, regulatory and industrial matters on biotechnology and bio-resources, with an emphasis upon international

and interdisciplinary aspects. The course covers various educational disciplines including international recognition of the ethics, legal and social implications (ELSI) under various international laws such as the Cartagena Protocol on Biosafety.

- (d) International dialogue and bilateral exchanges have also taken place among the member institutions of ABEN. These have involved faculty and student exchanges on specific educational research initiatives. ABEN members also participated in the Third International Meeting of Academic Institutions and other Organizations involved in Biosafety Education and Training, held 15 to 17 February 2010, at the UT. They met and discussed ways to enhance institutional collaboration with more academic institutions.
- (e) Some ABEN member institutions have strengthened domestic collaborative networks within their countries. For example, 10 national universities in Thailand are collaborating on agricultural biotechnology research through a Centres of Excellence (COE) scheme which is funded by the Thai Science and Technology Postgraduate Education and Research Development Office under the Higher Education Commission. This involves research on LMO biosafety and the commercial applications of biotechnology. Malaysian national universities have also been exchanging experience on biosafety education with a node at the University of Malaya. Furthermore, Malaysian universities have collaborated with each other and with the public research sector to increase human resources in LMO risk analyses with support from the Ministry of Science and Technology. ABEN members have also participated in that collaboration.

With regard to international and domestic collaborative research-based biosafety education initiatives, a number of exchange visits have been made among ABEN member institutions. Educational research collaboration has also taken place both at the national and regional levels. Specific examples include the following:

- (a) In December 2010 Kasetsart University, in Thailand, offered domestic and international student research workshops and biosafety research was one of the key topics.
- (b) Educational collaborative research on transgenic papaya risk assessment is being conducted by Kasetsart University, the UT and the Institute of Tropical Biology of Vietnam.
- (c) Cooperation on transgenic tree risk assessments has taken place among Chinese, Japanese and Thai universities.
- (d) The University of Tsukuba is collaborating with Kasetsart University, the University of Philippines Los Banos, Cornell University and some Indian universities on biosafety education.
- (e) Pakistan's national universities, including the University of Karachi, Quaid-i-Azam University, Kohat University of



The goal of the Network is to support human resource development, education and research in biosafety and biotechnology to contribute to the effective implementation of the Protocol.

Science and Technology, Peshawar Agriculture University and the National Institute of Biotechnology and Genetic Engineering (NIBGE) are collaborating with the UT on biosafety education and biotechnology applications. This initiative is supported by the Pakistani Higher Education Commission and has been endorsed by the Organisation of Islamic Conference Standing Committee on Scientific and Technological Cooperation (OIC-COMSTech). Under the initiative, human resources have been exchanged to increase the mutual understanding of biosafety education.

From the above, it is clear that the ABEN has played a major role in fostering regional cooperation in the field of biosafety education and training. Over a relatively short period of time, several graduate students and academic staff have benefited from the collaborative initiatives under the ABEN. A number of joint educational research activities have also been implemented. The outcomes of the joint efforts are a testament to the importance of regional and international cooperation in addressing issues of mutual concern. With increased participation and extramural financial support, ABEN will, without doubt, play an even greater role in advancing the implementation of the Cartagena Protocol and other international instruments and initiatives.

<sup>1</sup> The report of the meeting (UNEP/CBD/BS/CM-ET/2/4) is available at: <http://www.cbd.int/doc/meetings/bs/betaio-03/official/betaio-03-03-en.pdf>

<sup>2</sup> The ABEN website is: <http://www.aben.ait.ac.th>

<sup>3</sup> Further information about the Plant Transgenic Design Program is available at: <http://ptrad.gene.tsukuba.ac.jp/index.php>

<sup>4</sup> Further information about the Japan Society for the Promotion of Science (JSPS) is available at: <http://www.jsps.go.jp/english/e-soc/main.html>

<sup>5</sup> Detailed information about the initiative is available at <http://www.mext.go.jp/english/news/1283454.htm>

# Fostering regional cooperation in biosafety capacity-building across the Americas

## EXPERIENCE OF THE INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE

by **Bryan Muñoz** ● Mr. Bryan Muñoz Castillo is a Specialist in the Inter-American Institute for Cooperation on Agriculture. He can be contacted at: [bryan.Munoz@iica.int](mailto:bryan.Munoz@iica.int).

Products arising from modern biotechnology (living modified organisms, or LMOs) provide new opportunities to make productivity in agriculture sustainable. Over the past 20 years, countries of the Americas have been significant players in agricultural biotechnology development. At the same time, there has been increasing distress in the region over the possible environmental and health implications of modern biotechnology. This situation has led to the development of regulatory mechanisms for food safety and environmental risk assessment of LMOs aimed at protecting biodiversity. However, many countries have faced the challenge of making their regulatory frameworks functional in order to facilitate commercial trade and scientific research.

Implementation of the regulatory frameworks has been gradual, incoherent and mostly based on the immediate demand. A possible solution to this challenge could be the development of a standardized, integrated biosafety framework for the whole region. However, the implementation of such a framework would be expensive and very complicated. It would also not accurately reflect the particularities of each country in terms of environment, culture, policy, and economy.

### DEVELOPMENT OF REGIONAL STRATEGIES AND COOPERATION AMONG COUNTRIES AND INSTITUTIONS

In response to the above challenge, the Inter-American Board of Agriculture (IABA), in its resolutions 386 and 428, instructed the Inter-American Institute for Cooperation on Agriculture (IICA) to undertake activities that would lead to the inclusion of biotechnology and biosafety on the agricultural development agendas of its Member States. The IICA was also instructed to create the Hemispheric Program on Biotechnology and Biosafety (HPBB), with four lines of work: (i) technical capacity building, (ii) public perception and information, (iii) biotechnology policy and biosafety frameworks and (iv) international agreements on biotechnology and biosafety.

To date, the HPBB has focused its activities at the hemispheric level while also promoting cooperation and networking among its members through self-directed regional groups aimed at an-

swering specific needs within the region. Such initiatives include the North America Biotechnology Initiative or NABI (which is comprised of the the United States, Canada and Mexico); the Central America Biotechnology and Biodiversity Strategy (CABS), the Caribbean Program on Agricultural Biotechnology and Biosafety (CPABB) and the Biotechnology Group of the Southern Council on Agriculture (CAS-GT5).

This regional cooperative effort is guided by an internal task force comprised of experts from the member countries and IICA staff. The task force has recommended activities which the IICA should focus on while advancing the formulation and implementation of the program. The recommendations include identification and assessment of regional needs, collaborative efforts with other international institutions, formulation and approval of national policies and the adoption of appropriate regulatory framework for the safe use of agricultural biotechnology.

The IICA, in collaboration with member countries of the wider Caribbean region and other organizations and stakeholders<sup>1</sup> has also embarked on the development of a strategy for a regional program on agricultural biotechnology and biosafety. The program will incorporate specific needs that have been identified and deemed critical to improving agriculture in the Caribbean.

Currently, the regional strategies and initiatives are at different levels of development and implementation. The NABI and CAS-GT5 have been very effective in promoting the implementation of biosafety policies. For example, NABI has created a trilateral mechanism which constitutes a practical instrument for implementing Article 18.2 (a) of the Cartagena Protocol. NABI also promotes information exchange between Parties and non-Parties of the Protocol, encourages scientific exchanges, fosters harmonization of rules and regulations and risk analysis and anticipates potential risks thus allowing a quick risk management response. Likewise, CAS-GT5 promotes the exchange of information on biosafety among the Ministers of Agriculture in the southern region and has become an important instrument for regional policy.

These platforms have provided an opportunity for the countries of the Americas to discuss and reach consensus on important issues relating to the safe and sustainable use of agricultural biotechnology in food production.

### IMPLEMENTATION OF REGIONAL RESEARCH PROJECTS

IICA was created to support its member countries in transforming their agricultural institutions through national policy and technological cooperation. Although it is not a technical research center, IICA has nonetheless played a key role in the development of regional institutions for research and technology development



known as PROCIs. These institutions are aimed at addressing common problems and opportunities, promoting cooperation and generating benefits for all IICA members.

There are a number of other mechanisms for mutual cooperation which are directly supported by the IICA. The oldest are the Cooperative Program for the Technological Development of the Agro-food and Agro-industry in the Southern Cone (PROCISUR) and Programa Cooperativo Regional para el Desarrollo Tecnológico de la Caficultura en Centroamérica (PROMECAFE) These were established in the late 1970s and the early 1980s respectively. Others include:

- Programa Cooperativo de Innovación Tecnológica Agropecuaria para la Región Andina (PROCIANDINO, 1986) for the Andean Region;
- Cooperative Program on Research and the Technology Transfer for the South American Tropics (PROCITROPICOS, 1991) for Tropical Amazonian countries;
- Caribbean Agricultural Science and Technology Networking System (PROCICARIBE, 1995) for countries in the Caribbean affiliated with CARDI, as well as the Dominican Republic, Suriname and Belize;
- Sistema de Integración Centroamericano de Tecnología Agrícola (SICTA, 1996), established by the Central American Agricultural Council (CAC); and
- Programa Cooperativo en Investigación Agrícola y Tecnología (PROCINORTE, 2000) for Mexico, U.S. and Canada.

In order to support all of these initiatives, IICA collaborated in the establishment of two other hemispheric mechanisms to meet specific needs in the region:

- (a) Regional Fund for Agricultural Technology (FONTAGRO, 1997), a multinational research fund which finances specific projects; and

IICA has played a major role in assisting the countries of the Americas, through regional cooperation, to develop their scientific and technological capabilities in modern agricultural biotechnology and biosafety.

- (b) Forum for the Americas on Agricultural Research and Technology Development (FORAGRO, 1998) which examines hemispheric policy and identifies regional priorities in order to promote a hemispheric agenda and a global partnership in technological innovation.

It is important to note that these networks were not formed for the sole purpose of conducting research in the fields of biotechnology and biosafety and are not part of the HPBB. However, countries could use them for that purpose or collaborate with the HPBB when needed.

In conclusion, the IICA has played a major role in assisting the countries of the Americas, through regional cooperation, to develop their scientific and technological capabilities in modern agricultural biotechnology and biosafety. A number of regional and sub-regional initiatives have been implemented which range from supporting the development of regulatory frameworks to establishing mechanisms for the exchange of information. Undoubtedly, those initiatives have contributed significantly to the implementation of the Cartagena Protocol on Biosafety.

<sup>1</sup> The organizations include: the Caribbean Community (CARICOM), the Caribbean Agricultural Research and Development Institute/University of the West Indies (CARDI/UWI), the Scientific Research Council, Instituto Dominicano de Investigaciones Agropecuarias y Forestales (IDIAF), la Universidad Nacional de San Martín (IIB) and the University of Guyana.

# Cooperating to prevent illegal trade of environmentally-sensitive commodities

EXPERIENCES AND LESSONS LEARNED FROM THE GREEN CUSTOMS INITIATIVE

by **Ezra Clark** ● Mr. Ezra Clark is a Green Customs Coordinator at the United Nations Environment Programme, Division of Technology, Industry and Economics (UNEP/DTIE). He can be contacted at: ezra.clark@unep.fr.

Over the last few years, the Green Customs Initiative (GCI)—a unique alliance of secretariats of six Multilateral Environmental Agreements (MEA) and five international organisations—has successfully promoted specific and focused cooperation to enhance the capacities of countries to detect and prevent illegal trade and facilitate legal trade in environmentally sensitive commodities.<sup>1</sup> This has been achieved through various capacity-building and training initiatives for customs officers in developing countries. This award winning partnership supports a number of priorities of the United Nations Environment Programme (UNEP), including those on environmental sustainability and environmental governance.

A lack of awareness and the low-priority often assigned to environmental crime by many authorities make illegal international

trade an attractive area of operation for smugglers. Illegal international trade is a lucrative business with often a low risk of detection or punishment. National and international crime syndicates worldwide earn billions of dollars annually from exploiting and trafficking protected natural resources, smuggling proscribed hazardous materials and hazardous waste dumping. Illegal international trade in environmentally sensitive commodities is an international problem with serious consequences. It directly threatens human health and the environment, including the loss of biodiversity, and results in loss of revenue for governments. At the same time, it undermines the success of MEAs by circumventing agreed rules and procedures. It is also of great concern that environmental crime is often linked with other crime and illegal activities such as money laundering, drug smuggling and organised crime.

Customs and border protection officers constitute the front line of every country's defence against the illegal transboundary trade in environmentally sensitive commodities. Building the capacity of these officers to combat this illegal trade, while at the same time facilitating the legal trade of those commodities, is therefore vital in the context of the rapidly increasing globalisation and international trade. Even though they can be time-consuming and expensive when delivered separately for the wide range of issues that customs officers must cover, training and awareness-raising are key components of capacity-building. One possible effective solution is to develop coordinated and integrated training and information materials such as those promoted by the GCI.

The GCI evolved from the customs training activities developed by UNEP under its OzonAction Compliance Assistance Programme to prevent illegal trade in ozone depleting substances under the

Customs and border protection officers constitute the front line of every country's defence against the illegal transboundary trade in environmentally sensitive commodities.



MEMERA/THINKSTOCK



Montreal Protocol and from the capacity building that was initiated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The synergies and common ground between various treaties with trade-related elements were explored and a common framework was developed. This grew into the unprecedented partnership of the Green Customs Initiative. The partnership now comprises the Secretariats of six MEAs with trade-related components involving environmentally sensitive commodities. These include:

- Basel Convention on the Transboundary Movements of Hazardous Wastes and their Disposal,
- Cartagena Protocol on Biosafety to the Convention on Biological Diversity,
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES),
- Montreal Protocol on Substances that Deplete the Ozone Layer,
- Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and pesticides in International Trade, and
- Stockholm Convention on Persistent Organic Pollutants (POPs),

The partnership also includes the following organizations: Interpol, Organization for the Prohibition of Chemical Weapons (OPCW), United Nations Environment Programme (UNEP), United Nations Office on Drugs and Crime (UNODC), and World Customs Organization.

The expertise of the MEA secretariats and other organisations, which have significant experience in customs training and extensive knowledge of the relevant trade-related issues, is crucial for developing the structure and activities of the Initiative.

The GCI achieves its objectives through the delivery of cost-effective training and awareness-raising programmes for customs officers and enforcement personnel. These programmes include training workshops as well as the provision of assistance and information tools designed to complement and enhance existing customs training efforts under the respective MEAs.

As a means to ensure the sustainability of the Initiative and to enable countries to better incorporate Green Customs in their national training a project, generously funded by the United Nations Development Account, is currently underway to develop customs-specific e-learning modules through a cooperation agreement with the WCO. One of the modules will focus on the Cartagena Protocol on Biosafety and the role of customs officers in monitoring and controlling trade in LMOs. These comprehensive “self-learning” tools will be made available to customs officers around the world through the WCO training platform. Other plans for the next phase of the Initiative include scaling up cooperation on building capacities throughout the ‘enforcement chain’. This will involve providing better assistance to customs officers and

## Green Customs: Promoting cooperation to prevent illegal trade

- The Green Customs Initiative is a functioning and practical umbrella partnership involving multiple organisations with diverse mandates cooperating to combat illegal trade.
- The partnership is growing as the Initiative develops.
- Green Customs has, since 2004, delivered more than 30 regional, sub-regional and national training workshops and has enabled the partners and other experts to build the capacity of more than 350 customs officers in almost 120 countries.
- Green Customs is the only structured interaction with the customs community for some of the participating MEAs.
- Customs administrations frequently request and express the need for training on issues covered by the Green Customs Initiative.
- There is a growing interest among countries to incorporate Green Customs in national customs training curricula. India was the first country to do so and many others are following suit.
- The Green Customs Guide to Multilateral Environmental Agreements has been produced as a result of a collaborative effort by the Partners and is available in four languages (English, French, Spanish and Russian).
- In cooperation with the WCO, e-learning modules for customs officers have been developed on the Green Customs Initiative and on ozone depleting substances. Development of modules on the other conventions is in progress.
- The partners regularly develop additional training and training materials and improve existing ones.
- Resources for the Initiative have been secured from a range of funding bodies and donors which is a testament to the strength of the concept and the achievements of the partners.
- In 2007, Green Customs was awarded the prestigious Montreal Protocol 20th Anniversary Partners Ozone Protection Award.

strengthening the capacities of other enforcement authorities and stakeholders in the legal system, including prosecutors and judges.

Cooperation on the prevention of illegal trade in environmentally sensitive commodities is an excellent opportunity for international organisations and MEA Secretariats to work together across different thematic areas in support of Customs agencies. This is due to the fact that many problems and solutions regarding the monitoring of trade in ozone depleting substances, toxic chemicals, hazardous waste, LMOs and endangered species are similar. The Green Customs Initiative has proven to be a practical and effective means to facilitate such cooperation. It is an iconic and significant example of good environmental governance achieved through cooperation, coordination and synchronisation of activities of MEA secretariats and other partner organisations.

*More information on the Green Customs Initiative, including the Green Customs Guide to Multilateral Environmental Agreements, is available at: <http://www.greencustoms.org>*

<sup>1</sup> Environmentally sensitive commodities include: endangered species, living modified organisms (LMOs), toxic chemicals, hazardous waste and ozone depleting substances

# Joining hands in sharing scientific information on living modified organisms

EXPERIENCES OF COOPERATION BETWEEN THE INTERNATIONAL CENTRE FOR GENETIC ENGINEERING AND BIOTECHNOLOGY AND THE SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY

by **Decio M. Ripandelli** ● IMr. Decio M. Ripandelli is the Head of the Biosafety Unit at the International Centre for Genetic Engineering and Biotechnology (ICGEB). He can be contacted at: decio@icgeb.org.

Since 1998, the International Centre for Genetic Engineering and Biotechnology (ICGEB) has managed and shared a bibliographic collection of articles of scientific studies relevant to biosafety and risk assessment of biotechnology which has contributed significantly to scientific debates on living modified organisms (LMOs). This article describes the ongoing collaboration between the ICGEB and the Secretariat of the Convention on Biological Diversity (SCBD), which is also the Secretariat for the Cartagena Protocol on Biosafety, to promote wider access to and use of biosafety information by making the ICGEB's *Bibliosafety* Database fully accessible through the Biosafety Clearing-House (BCH).

## BACKGROUND

The safe and sustainable use of modern biotechnology is playing an increasingly important role in agricultural development, particularly in developing countries. International research centres have an obligation to enhance their research activities aimed at identifying new technologies (including biotechnology) for the advancement of agriculture worldwide. Moreover, they must also ensure that the introduction of new technologies is done in a safe and socially-conscious manner which respects local conditions for the sustainable improvement of agricultural productivity. This has been reinforced by the adoption of national regulatory frameworks by Parties to the Cartagena Protocol on Biosafety, which came into force in 2003. However, several governments, some of which are also ICGEB Member States, urgently need to acquire specific scientific expertise in this field and to have access to crucial information and tailor-made capacity-building initiatives.

Since the establishment of its dedicated Biosafety Unit in 1997, the ICGEB has been providing the international community with services related to LMOs, and their environmental release, with particular emphasis on training and dissemination of scientific information. With respect to the latter, ICGEB has established, maintained and operated a number of freely-accessible on-line databases. The most well-known of these is the above-mentioned

*Bibliosafety* Database. This is a searchable collection of scientific publications dedicated to biosafety and risk assessment in biotechnology.<sup>1</sup>

## THE BIBLIOSAFETY DATABASE

The ICGEB began operating the *Bibliosafety* Database in 1998 following an agreement that was entered into with CAB International (CABI), a not-for-profit international organization that improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment. By virtue of this agreement, and at a cost of an annual fee, the ICGEB has a non-exclusive, limited license to supply abstracts of scientific publications on biosafety through a publicly-accessible and searchable internet service. The purpose is to ensure that the abstracts contribute to the various scientific debates arising from the commercial release of LMOs.

On a monthly basis, CABI supplies the ICGEB with recently-indexed abstracts which are then screened and classified by scientists in the ICGEB Biosafety Unit. The abstracts are organized into a number of "topics of concern" that have been identified as major issues being debated globally.

To date, the database contains almost 10,000 records of articles published since 1990. Monthly updates are also distributed to some 600 freely-subscribed members. Furthermore, in the last three years, the database has averaged 104,000 hits per year. Recently, the database was redesigned to improve its accessibility and user-friendliness.

The *Bibliosafety* Database is a very useful resource for many users. It has also become an invaluable in-house tool for biosafety instruction. It allows for fellows undergoing training at the ICGEB Biosafety Unit to act as online "editors" of the database.

In light of the above, it was only natural for the *Bibliosafety* Database to become interoperable with the scientific database of the BCH, which is the information exchange mechanism established by the Cartagena Protocol on Biosafety.

## INTEROPERABILITY OF ICGEB'S BI[BLI]OSAFETY DATABASE WITH THE BCH

In November 2003, the Secretariat of the Convention on Biological Diversity (SCBD) and the ICGEB agreed to collaborate in promoting access to and use of biosafety information. In this regard, they entered into a Memorandum of Cooperation (MoC) to ensure the interoperability of their relevant informatics tools. This agreement was in response to the calls by Intergovernmental Committee for the Cartagena Protocol on Biosafety (ICCP) for part-



nerships between the BCH and international organizations and other sources of scientific information, linkages with relevant databases, and interoperability with information exchange systems. The MoC recognized (i) the important role of the ICGEB as a source of information and expertise in subject areas of relevance to the Biosafety Protocol and (ii) the potential usefulness of the information being provided by the ICGEB to Parties to the Protocol.

According to the terms of the MoC, the two Secretariats have intensified their collaboration. As a result, the *Biosafety Database* is currently fully accessible through the BCH at <http://bch.cbd.int/database/bibliographic-references/>. BCH users who wish to retrieve information from peer-reviewed scientific and technical publications relevant to biosafety issues can obtain a summary of information, such as the title, author, year of publication, publishing journal and keywords. Should the user require more complete information, a direct link to the ICGEB's database allows for the retrieval of the publication's abstract, the Digital Objective Identifier (when available) as well as the contact details of the corresponding author from whom a copy of the complete article can be requested.

#### FUTURE ACTIVITIES

In response to the mandate given to it by its Member States, the ICGEB will pursue, and possibly increase, its activities aimed at enhancing the capacities of developing countries in ensuring the safe and sustainable use of modern biotechnology. The

The *Biosafety Database* is an excellent tool for disseminating reliable scientific information necessary for ensuring the safe and sustainable use of modern biotechnology.

ICGEB will continue to collaborate with the SCBD and other organizations in disseminating reliable scientific information necessary for ensuring the safe and sustainable use of modern biotechnology. The *Biosafety Database* is an excellent tool for this purpose and its interoperability with the BCH undeniably increases its potentialities and outreach value. Other informatics tools developed by the ICGEB, such as the Risk Assessment Searching Mechanism (RASM), which is an online collection of risk assessment documents related to official government decisions concerning the commercial release of LMOs, provide additional opportunities for even wider dissemination of information. In this regard, the ICGEB would welcome the possibility of further collaboration with the SCBD by also ensuring access to the RASM through the BCH.<sup>2</sup> The interoperability of the ICGEB and BCH platforms will be one of the key elements of a survey that the ICGEB intends to launch in the near future among the subscribers to its ICGEB Biosafety Web Pages. This survey will be conducted in order to ensure that the quality and the content of the information provided to the international community meet the relevant needs of the end-users.<sup>3</sup>

<sup>1</sup> The database is available at: <http://biosafety.icgeb.org/>

<sup>2</sup> The Risk Assessment Searching Mechanism's (RASM) website is available at: <http://rasm.icgeb.org/>

<sup>3</sup> Acknowledgements: I am thankful to my present and past colleagues in the Biosafety

Unit for their help and for the enthusiasm with which they have put their expertise at the service of ICGEB's mandate. I wish to single out in particular, Giovanni Ferraiolo, currently the Programme Officer for the BCH at the SCBD, who was the main promoter of the *Biosafety Database* between 1997 and 1998 when he was at the ICGEB.

# Beyond the 10th anniversary

## ADOPTING A STRATEGIC APPROACH TO THE IMPLEMENTATION OF THE CARTAGENA PROTOCOL ON BIOSAFETY

by **Andreas Heissenberger** ● Mr. Andreas Heissenberger is the Deputy Unit Head for the Federal Environment Agency of Austria. He can be contacted at: [andreas.heissenberger@umweltbundesamt.at](mailto:andreas.heissenberger@umweltbundesamt.at).

Since the adoption of the Protocol more than ten years ago, the number of Parties to the Protocol has increased rapidly and is still growing. As well, a number of decisions have been taken by the Conference of the Parties serving as the meeting of the Parties to the Protocol (COP-MOP), the governing body of the Protocol, to facilitate its implementation even though operational details for certain issues, such as risk assessment and socio-economic considerations, still need to be worked out. Furthermore, many projects and activities have been carried out by Parties, international organisations and other stakeholders to facilitate the implementation of the Protocol.

Although progress has been made in many fields, due to the commitment and collaborative efforts of the Parties and other stakeholders, there is still more work and improvements that need to

be made. For this reason, the Parties to the Protocol decided, at the fifth meeting of the COP-MOP, to adopt a Strategic Plan for the Protocol covering the period 2011 to 2020.

### THE FIRST TEN YEARS

At its first meeting, the COP-MOP adopted its medium-term programme of work, covering the period from the second to the fifth meeting of the Parties. This programme of work covered a number of standing issues including the financial mechanism, compliance issues under the Protocol, operation of the Biosafety Clearing-House (BCH), capacity-building, and cooperation with other organizations. It also included “rolling issues”, which were addressed at one or more COP-MOP meetings. These included: handling, transport, packaging and identification of living modified organisms (LMOs); liability and redress, socio-economic considerations, risk assessment and risk management, public awareness and participation, monitoring and reporting, and assessment and review of the Protocol.

The first programme of work was intended to facilitate the decision-making by the COP-MOP in areas where guidance was most needed in the early implementation phase of the Protocol. However, no strategic goals, with regard to the implementation and functioning of the Protocol, were established over the period covered by first programme of work.

### THE STRATEGIC APPROACH

As demonstrated by the first assessment and review process conducted in the run up to COP-MOP 4, progress with the implementation of the Protocol is still limited. This is partly due to the lack of adequate resources but also due to a lack of a clear definition of objectives, milestones and priorities. As the Protocol covers many different topics and does not give details on practical implementation, it is important to prioritize fields of activities, establish meaningful goals and to define milestones. In order to measure progress in reaching the defined objectives it is also essential to establish suitable indicators.

During the evaluation of the effectiveness of the Protocol conducted at COP-MOP 4, it became clear, and was agreed that the new programme of work should be based on a strategic plan.

### PREPARATION OF A STRATEGIC PLAN

As a starting point, Parties were asked to submit their views on possible elements of the strategic plan. Based on those submissions, the Secretariat prepared a draft Strategic Plan and initiated consultative processes to enable Parties to review and provide input into the draft. The draft was circulated to the Parties and relevant organisations for comments and a discussion forum was established on the BCH. In parallel, the draft was discussed during several meetings in order to increase the input from Parties and other stakeholders. These included the meeting of the Liaison



SILVIA EDLACHER



Group on Capacity-Building for Biosafety and a meeting of biosafety experts which were convened at the same time as the fourteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) in Nairobi in May 2010. This consultative process was extremely useful to facilitate a better understanding of the needs and priorities of different countries and to build consensus on the Strategic Plan.

The draft Strategic Plan, together with a new programme of work, were considered and adopted by the COP-MOP at its fifth meeting in Nagoya, Japan in October 2010. The Strategic Plan consists of a vision, a mission statement and five strategic objectives. For each strategic objective there are a number of operational objectives, expected outcomes and indicators to be used to measure progress.

The five strategic objectives are: 1) Facilitating the establishment and further development of effective biosafety systems for the implementation of the Protocol; 2) Further developing and strengthening the capacity of Parties to implement the Protocol; 3) Promoting compliance with and effectiveness of the Protocol; 4) Enhancing the availability and exchange of relevant information and; 5) Expanding the reach of the Protocol and promoting cooperation. These broad and relatively long-term objectives were selected because of their high importance in furthering the implementation of the Protocol.

The operational objectives define, on a more functional (implementation) level, measurable short-term goals relating to different provisions of the Protocol. The outcomes lay out the expected results to be realised or milestones to be reached under the dif-

## The adoption of the Strategic Plan by the Parties at COP-MOP 5 was a major step towards a more pragmatic and coordinated effort to implement the Protocol.

ferent operational goals. The indicators are measurable or observable “milestones” to be used to monitor progress towards achieving the projected outcomes, i.e. indicate/provide evidence about whether a certain goal has been reached or not.

Indicators are a very important tool, as has been proven by many other international processes, such as the international effort to achieve the Millennium Development Goals (MDGs). Although some of the indicators need to be modified after gaining experience, most of them proved to be extremely useful in evaluating progress and in highlighting areas where adjustments are needed. A review of the set indicators is also foreseen in the mid-term review of the Strategic Plan for the Protocol. As with the MDGs, the main challenge in using indicators to measure the progress in the implementation of the Protocol, will most likely be the availability of data which, to a large extent, would need to be provided by the Parties.

In conclusion, the adoption of the Strategic Plan by the Parties at COP-MOP 5 was a major step towards a more pragmatic and coordinated effort to implement the Protocol. The Strategic Plan will greatly facilitate the work of the Parties, the Secretariat and other stakeholders. It will also promote cost-effective implementation activities.



# Useful information



## NEW PUBLICATIONS



Text of the Nagoya - Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety



A Guide to the Roster of Biosafety Experts



Year in Review 2010  
(The Cartagena Protocol on Biosafety, page 46)



Training Manual on Risk Assessment of LMOs  
[http://bch.cbd.int/cpb\\_art15/training.shtml](http://bch.cbd.int/cpb_art15/training.shtml)

**Biosafety Protocol Newsletter  
Feedback Questionnaire**

<http://survey.biodiv.org/TakeSurvey.aspx?SurveyID=72KK4m2>

## NEW WEB PAGES

- A re-designed website of the Cartagena Protocol on Biosafety on 28 June 2010  
<http://bch.cbd.int/protocol>
- The Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety  
[http://bch.cbd.int/protocol/NKL\\_Protocol.shtml](http://bch.cbd.int/protocol/NKL_Protocol.shtml)
- Strategic Plan for the Cartagena Protocol on Biosafety for the Period 2011-2020  
[http://bch.cbd.int/protocol/issues/cpb\\_stplan\\_txt.shtml](http://bch.cbd.int/protocol/issues/cpb_stplan_txt.shtml)
- Assessment and Review  
[http://bch.cbd.int/protocol/issues/cpb\\_art35.shtml](http://bch.cbd.int/protocol/issues/cpb_art35.shtml)
- Programme of work on public awareness, education and participation concerning the safe transfer, handling and use of living modified organisms (2011-2015)  
[http://bch.cbd.int/protocol/cpb\\_art23\\_pow.shtml](http://bch.cbd.int/protocol/cpb_art23_pow.shtml)
- Forum for National Focal Points and National Authorized Users  
[https://bch.cbd.int/protocol/cpb\\_art20\\_forums\\_nfps.shtml](https://bch.cbd.int/protocol/cpb_art20_forums_nfps.shtml)
- LMOs Quick-links  
<http://bch.cbd.int/resources/quicklinks.shtml>
- UN Decade on Biodiversity  
<http://www.facebook.com/UNBiodiversity>

## Useful Links

- International organizations involved in activities relevant to implementation of the Biosafety Protocol and summaries of their activities and contact information  
<http://bch.cbd.int/database/organizations/>

# Recent and upcoming biosafety events

## RECENT MEETINGS

### **Fifth Meeting of the Conference of the Parties serving as meeting of the Parties to the Cartagena Protocol on Biosafety (COP-MOP 5):**

COP-MOP 5 was held 11-15 October 2010 in Nagoya, Japan. The main highlights of the meeting were the adoption of: (i) the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Protocol on Biosafety, (ii) the Strategic Plan for the Protocol (2011-2020) and (iii) the programme of work on public awareness, education and participation concerning the safe transfer, handling and use of LMOs. A record number of more than 10,000 delegates attended the meeting.

**Biosafety Clearing House (BCH):** The Secretariat, in collaboration with and support of the UNEP-GEF Biosafety Project, convened a training workshop on the general navigation of the BCH and management of national records from 8 to 9 October 2010 Nagoya, Japan. At least 30 National Focal Points for the Biosafety Clearing-House (BCH-NFPs) participated.

**Compliance Committee:** The seventh meeting of the Compliance Committee under the Protocol took place from 8 to 10 September 2010 in Montreal. The Committee made a number of recommendations to COP-MOP 5 regarding, among other things, how to improve the supportive role of the Committee.

**Risk Assessment and Risk Management:** The Pacific Subregional Workshop on Capacity-building and Exchange of Experiences on Risk Assessment and Risk Management of LMOs was held from 5 to 7 July 2010 in Nadi, Fiji. Twelve participants attended the work-

shop. Participants learned how to establish an interdisciplinary teamwork for risk assessment, how to conduct a risk assessment and how communicate the outcomes of a risk assessment in a structured report.

The Asian Training Course on Risk Assessment of Living Modified Organisms was held from 12 to 16 July 2010 in Siem Reap, Cambodia. Twenty three participants attended the course. Participants were introduced to the risk assessment process, the preparatory work for risk assessment, how to conduct a risk assessment, how to prepare a risk assessment report and how to submit risk assessment summaries to the Biosafety Clearing-House. They also discussed the Roadmap for Risk Assessment of LMOs developed by the AHTEG.

The Second Meeting of the Ad hoc Technical Expert Group (AHTEG) on Risk Assessment and Risk Management took place from 19 to 23 April 2010 in Ljubljana, Slovenia. The AHTEG finalized the development of the "Guidance on Risk assessment of Living Modified Organisms". It also deliberated on possible modalities for cooperation in identifying LMOs or specific traits that may have adverse effects on biological diversity.

**Liability and Redress:** The third and fourth meetings of the meeting of the Group of the Friends of the Co-Chairs on Liability and Redress in the Context of the Cartagena Protocol on Biosafety were held in Kuala Lumpur, Malaysia from 15 to 19 June 2010 and in Nagoya, Japan from 6 to 9 October 2010, respectively. The fourth meeting of the Group finalised and submitted to COP-MOP 5 the Nagoya - Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, together with a draft decision for its adoption.

**PHOTOS FROM LEFT TO RIGHT:** Mr. Michihiko Kano, Minister of Agriculture, Forestry and Fisheries of Japan opening the COP-MOP 5 meeting; Journalists attending a press conference at COP-MOP 5; Jimena Nieto and René Lefeber, Co-Chairs of the Group of the Friends on Liability and Redress celebrate the adoption of the Nagoya - Kuala Lumpur Supplementary Protocol on Liability and Redress; Japanese schoolchildren at the opening of COP-MOP 5.





**Public Awareness, Education and Participation:** A joint Aarhus Convention/Cartagena Protocol on Biosafety workshop on public awareness, access to information and participation regarding LMOs/GMOs was held 8-9 October 2010 in Nagoya, Japan, immediately before COP-MOP 5. More than 50 participants exchanged experiences and lessons learned regarding public awareness, access to information and public participation and made recommendations on the programme of work on public awareness, education and participation concerning LMOs to COP-MOP 5.

**Capacity-Building:** The sixth coordination meeting for Governments and organizations implementing and/or funding biosafety capacity-building activities took place 1-3 February 2010 in Siem Reap, Cambodia. The meeting made recommendations to COP-MOP 5 regarding socio-economic considerations, the draft programme of work on public awareness and the draft strategic plan for the Protocol (2011-2020).

The seventh meeting of the Liaison Group on Capacity-Building for Biosafety also took place 4-5 February 2010 in Siem Reap, Cambodia. This meeting also made recommendations to COP-MOP 5 on the draft strategic plan and the draft programme of work on public awareness, education and participation.

The third International Meeting of Academic Institutions and Organizations Involved in Biosafety Education and Training took place 15-17 February 2010 in Tsukuba, Japan. The participants shared experiences about biosafety education programmes and make recommendations to further improve biosafety education and training.

**Handling, Transport, Packaging and Identification:** The Secretariat facilitated a Malaysian National Workshop on Identification and Documentation of LMOs from 25-29 January 2010 in Kuala Lumpur, Malaysia. Participants were introduced to the Protocol and its requirements regarding the identification and documentation of LMOs, the role of customs officials in implementing the Protocol and the techniques and methods for sampling and detection of LMOs.

## UPCOMING MEETINGS

- **30 March - 1 April 2011, Montreal, Canada:** Confirmed Sixth meeting of the Informal Advisory Committee on the Biosafety Clearing-House
- **March to May 2011 :** Online discussion groups on socio-economic considerations
- **4-6 April 2011, Chisinau, Republic of Moldova:** Seventh Coordination Meeting for Governments and Organizations Implementing and/or Funding Biosafety Capacity-building Activities
- **7-8 April 2011, Chisinau, Republic of Moldova:** Eighth meeting of the Liaison Group on Capacity-building for Biosafety
- **11-15 April 2011, Ljubljana, Slovenia:** Central and Eastern European Regional Training of Trainers' Workshop on the Identification and Documentation of Living Modified Organisms under the Cartagena Protocol on Biosafety
- **30 May - 3 June 2011:** Third meeting of the Ad hoc Technical Expert Group on Risk Assessment and Risk Management of Living Modified Organisms
- **June 2011:** Online Regional Online Conferences on Socio-economic Considerations in Decision-making concerning Living Modified Organisms
- **18-22 July 2011:** Asia-Pacific Regional Training of Trainers' Workshop on the Identification and Documentation of Living Modified Organisms
- **14-16 November 2011:** Workshop on Capacity-building for Research and Information Exchange on Socio-economic Impacts of Living Modified Organisms



COURTESY OF CBD



The **Cartagena Protocol on Biosafety to the Convention on Biological Diversity** is an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health.

The **Nagoya - Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety** is an international treaty which aims to contribute to the conservation and sustainable use of biodiversity by providing international rules and procedures for liability and redress in the event of damage resulting from LMOs.