



Convention on Biological Diversity

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CONFERENCE OF THE PARTIES TO THE
CONVENTION ON BIOLOGICAL DIVERSITY
SERVING AS THE MEETING OF THE PARTIES TO
THE CARTAGENA PROTOCOL ON BIOSAFETY

Fifth meeting

Nagoya, 11-15 October 2010

CAPACITY-BUILDING

UPDATE ON ON-GOING BIOSAFETY CAPACITY-BUILDING INITIATIVES: A COMPILATION OF SUBMISSIONS MADE BY PARTIES, OTHER GOVERNMENTS AND RELEVANT ORGANIZATIONS

Note by the Executive Secretary

I. INTRODUCTION

1. In its decision BS-IV/3, paragraph 4, the Conference of the Parties serving as the meeting of the Parties to the Protocol invited Parties, other Governments and relevant organizations to provide information on their capacity-building activities to the Secretariat and to the Biosafety Clearing-House at least six months prior to its regular meetings in order to facilitate comprehensive reporting on the implementation of the Action Plan and promote the sharing of experiences and lessons learned.
2. The Executive Secretary is pleased to circulate herewith, for the information of delegates, a compilation of submissions that were received as of 30 June 2010. The compilation also includes updates on capacity-building initiatives that were provided to the fifth and sixth Coordination Meetings for Governments and Organizations Implementing and/or Funding Biosafety Capacity-Building Activities, held 9-11 March 2009 in San José, Costa Rica and 1-3 February 2010 in Siem Reap, Cambodia, respectively.
3. The information is being made available in the format and language in which it was received by the Executive Secretary.

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In order to minimize the environmental impacts of the Secretariat's processes, and to contribute to the Secretary-General's initiative for a C-Neutral UN, this document is printed in limited numbers. Delegates are kindly requested to bring their copies to meetings and not to request additional copies.

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COUNTRY SUBMISSIONS

AUSTRIA

[26 January 2010]
[SUBMISSION: ENGLISH]

Biosafety Capacity Building - Recent activities and developments in Austria

Activities

In November 2009 Austria co-financed two workshops which were organized within a UNDP/GEF implementation project in Kuala Lumpur, Malaysia.

The first workshop dealt with risk assessment, focused on testing the draft roadmap developed by the AHTEG. The workshop was aimed to train the Malaysian Biosafety Committee and was organized as mix of lectures and practical work in groups.

The second workshop was a laboratory course aimed to train Malaysian laboratory staff in quantitative PCR techniques for LMO detection. This course also included theoretical background lectures and practical training, using real samples which were analyzed by the participants.

Both courses were very well organized by the local experts and the cooperation worked very well. Participants were very actively involved in the discussions as well as in the practical exercises. Both activities were well received and the feedback by trainers and participants was very positive. Follow-up activities are currently discussed but are not very likely due to funding restrictions.

Recent developments

The Austrian Government adopted in 2009 a strategic guideline on “Environment and Development” which was drafted by the Ministry of European and international Affairs in co-operation with the Austrian Development Agency and the Ministry of Agriculture, Forestry, Environment and Water Management. This guideline also includes as one of the funding priorities assistance in the implementation of Multilateral Environment Agreements (MEA), e.g. the Cartagena Protocol. It also identifies biosafety as a key environmental issue in development cooperation.

As this guideline is very new, there are currently no examples for funding of biosafety capacity building projects. However, the inclusion of biosafety and MEAs in the overall development agenda can be seen as a major step towards possible funding of projects to assist developing countries in the implementation of the Cartagena Protocol.

CAMBODIA

[10 MARCH 2009]
[SUBMISSION: ENGLISH]

Update on Biosafety Capacity-Building Projects in Cambodia

March 10, 2009

1. Cambodia is committed to the implementation of the Convention on Biological Diversity and Cartagena Protocol on Biosafety. Since Cambodia became a Party to the Protocol on Biosafety

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(2003), the country has made a great progress in terms of biosafety framework development. The country has improved in overall capacity through implementing the UNEP/GEF funded project on Development of the National Biosafety Framework (2003-2005). Through the project, Cambodia produced some materials including biosafety law, which was passed by the Parliament in December 2007, training on risk assessment and risk management for relevant stakeholders; maintain BCH website, and promoting public understanding on Cartagena Protocol in Biosafety.

2. Cambodia also participated in the UNEP/GEF funded project on Building Capacity for Effective Participation in the Biosafety Clearing-House in 2006. The project provided capacity for enhancing capacity to communicate via BCH website and increased capacity of data entry persons from relevant ministries which provided information on the release of living modified organisms (LMOs) and biotechnology regulation to the Ministry of Environment.
3. In March 2006, Cambodia has been provided fund to implement the National Biosafety Framework, which is aimed building capacity of the five component set in the NBF. The project is scheduled to undertake activities from August 2006 on. The goal of the project is to assist the Royal Government of Cambodia to put in place a workable and transparent national biosafety framework, in line with national development priorities, Agenda 21, and the CBD. This goal will be achieved through the following specific objectives:
 - a. To assist Royal Government of Cambodia (RGC) to establish and consolidate a fully functional and responsive regulatory regime in line with Cartagena Protocol and national needs and priorities;
 - b. To assist RGC to establish and consolidate a functional national system for handling requests, carry out risk assessment decision-making and administrative tasks;
 - c. To assist RGC to establish and consolidate a functional national system for “follow -up” activities such as monitoring of risk exposure and environmental effects, and strengthening of enforcement mechanisms, institutions and procedures; and
 - d. To assist RGC to establish and consolidate a functional national biosafety system for public awareness, education, participation, and access to information.
4. This project would help RGC to strengthen the existing institutional and technical structures and infrastructures needed to meet the obligations of the Protocol, and have an operational National Biosafety Framework. This project will contribute to:
 - The building of capacity for implementation of the Cambodia’s National Law on Biosafety and Sub-Decree on Management and Control of LMOs and relevant guidelines to ensure the safe use of modern biotechnology;
 - Putting in place specific technical guidelines for facilitating transport, handling and use of LMOs;
 - The strengthening of appropriate institutional structures for risk assessment and decision making;
 - The development and implementation of policies for biotechnology and biosafety;
 - The training of decision makers, scientists, and administrative and technical staff on legal and technical matters;
 - The reinforcement of the existing infrastructures (laboratories) to strengthen monitoring and identification of LMOs;
 - Setting up and making operational a mechanism for monitoring and enforcement
 - The strengthening of communication and information exchange relating to biosafety

- both at the national level as well as through the BCH
 - Systems for strengthening public awareness, education and participation in decision making on LMOs.
- 5. Achievements:** Insofar, Cambodia produced certain outputs in terms of capacity building. This includes: Risk Assessment and Risk Management Guideline (in Khmer and English), a draft sub-decree on LMOs management, application forms for LMOs release, glossary on biosafety and biotechnology in Khmer, draft action plan on biosafety and biotechnology, draft biosafety curriculum for secondary school and training manual on biotechnology. Cambodia is developing a mini-lab on LMOs testing, which will be ready in mid-2009. Moreover, Cambodia continues to train lawyers, border inspectors, custom officers, phyto-sanitary inspectors, veterinary agents and environmental agents to be familiar with system of release of LMOs into the environment. Through the project, more than 1,000 students participated in biosafety debate on a national TV. Expert discussion on biosafety has been organized via a radio station to promote public understanding on biosafety, advantages and disadvantages of LMOs application and obligation of the CPB.
- 6. Lessons learned:** The UNEP/GEF funded project on implementing the NBF has arriving at certain successes and sustainability, among these are as follows:
- a. The establishment of a coordination mechanism for relevant agencies to take in the implementation of the project is important to ensure the outputs of the project and this is important to draw attention to various decision-makers to support future capacity building initiatives;
 - b. Public understanding on biosafety should be promoted at all level and all means especially TV and radio programs to that local people can reach the message initiated at the national level;
 - c. It is wise to involve all relevant stakeholders when drafting the action plan on biosafety and biotechnology so that priority areas on capacity building are addressed in the policy;
 - d. A regional cooperation is essential to promote information sharing and experiences on implementing the projects notably capacity development on biosafety.

CROATIA

[21 May 2010]
[SUBMISSION: ENGLISH]

**Submission of information on capacity-building activities undertaken in support of the
Cartagena Protocol on Biosafety**

In reference to the CBD Notification 2010-062 dated 6 April 2010 on the above-mentioned subject, please find information on capacity-building activities that have been undertaken in the period from July 2007 until April 2010 in the Republic of Croatia.

Taking into consideration the fact that the Republic of Croatia is the candidate country to the European Union, the major priority of the State during that period was to align and harmonise its national environment legislation including legislation on GMOs according to *acquis* legislation of the EU. All available professionals including scientists working in the government bodies (CNAs) responsible for the issues of GMOs and/or biosafety have been involved in the work on *acquis* and had to transpose a great number of EU regulations into the national legislation. As a result, several new national laws and/or

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regulations have been enacted under the primary national legislation and numerous ordinances under a secondary national legislation. At present, the national legal/biosafety policy development and enforcement structure in the Republic of Croatia has been completely finalized.

However and notwithstanding the huge task on harmonising and preparing additional and missing national legislation on GMOs, it should be noted that at the same time, all competent national authorities in the Republic of Croatia took really significant efforts in building their biosafety capacities particularly in the following areas: institutional/administrative development and human resource development/training.

In regards to the further strengthening of institutional and/or administrative capacities in biosafety, the following activities and procedures have been successfully conducted. For example, Government of the State at its session held on 24 December 2008 adopted a Decision on the establishment of the Council for GMOs (Official Gazette No. 156/08) which started its work and activities in February 2009. The Council consists of 17 members who are scientists, University professors and representatives of other groups of stakeholders. Based on proposed nominations prepared by the CNAs, the Council made a selection and appointed the members of the Committee for the Contained Use of GMOs consisting of 11 scientists and 9 members of the Committee for the Release of GMOs into the environment. Roles and responsibilities of each body are clearly defined and laid down according to the current Act on GMOs (Official Gazette No. 70/05 and 137/09).

In addition, in regards to the strengthening of institutional and/or administrative capacities, a significant achievement has been accomplished related to laboratories for detection and GMO analysis. Currently in the Republic of Croatia there are two laboratories that have been authorized. One is laboratory for the quantification and risk assessment and is located at the Croatian Institute for Public Health in Zagreb. This laboratory deals with the testing of raw materials and finished products, food for human consumption and livestock nutrition. In 2009, the laboratory has been authorized and accredited to the ISO/IEC 17025 and from July 1, 2009 it has gained a full membership in the European Network of Laboratories for detection of GMOs (i.e. ENGL). Two experts from this laboratory have been appointed as representatives from Croatia to the Steering Committee of the ENGL and they have already participated at some meetings of the Committee in Ispra.

The second laboratory is located in Osijek, in the Institute for Seed and Seedlings. Facility of the laboratory and its completely new equipment have been established and developed through the FAO Project „Capacity building of regulatory agencies for handling and monitoring GM crops, products and processed food“ that finished in October 2009. This laboratory is authorized to test, control and do monitoring of GMOs and products containing and/or consisting of, or derived from GMOs in the seed material, plant germplasm, planting material of forest species and hybrids for use in forestry. The laboratory is placed in the database of the ENGL as the other national laboratory for the detection of GMOs in Croatia.

For both laboratories becoming attached to the ENGL was a significant step particularly for their professionals as they had new opportunities to participate in the proficiency tests, attend the meetings of Steering Committee and they have been provided with the information on the control not only of authorized but also of non-authorized GMOs.

From July 2007 until April 2010, numerous workshops took place in Republic of Croatia and many professionals and scientists went abroad to attend and participate at various meetings, conferences, seminars and workshops. There was also an opportunity for a few study tours.

Since October 2008, the Ministry of Culture had been involved in organizing several workshops that have been funded by the European Commission/TAIEX, other international organizations/institutions (e.g. UNEP-GEF) and the Environmental Agency from Vienna, Austria. The Ministry has prepared detailed proposals and agenda for each workshop and assisted in their logistics. Six workshops have been organized under the UNEP-GEF BCH Project in the period from October to December 2008; one regional workshop on risk assessment was held from 9-10 February 2009 and two TAIEX workshops have been prepared (one was held from 12 to 13 Nov 2009 and one will take place on 15 June 2010) and the proposal for one ICGEB workshop has been done which should be held in 2011. The Ministry of Culture was a national competent authority that took an initiative and contributed greatly to facilitate and help building and strengthening national human resource capacity in biosafety. All groups of stakeholders have been included and invited to the workshops organized under the Ministry of Culture, Nature Protection Directorate.

Ministry of Health and Social Welfare has also contributed to the human resource development in Republic of Croatia. Two workshops has been organized under their jurisdiction: the TAIEX Workshop on „GM food and feed“ in 2007 and the TAIEX Workshop on „Novel Food and GMOs“ in 2009.

In recent months, the Ministry of Culture, Nature Protection Directorate has been preparing to set up a national biosafety portal which will become a national node of the BCH on both languages, Croatian and English. The Ministry is a competent national authority responsible for implementation of provisions under the Convention on Biological Diversity, its supplementary Cartagena Protocol on Biosafety and also for the Release of GMOs into the environment according to Part B of the Directive 2001/18/EC (related to field trials).

This portal will present a great contribution as it will become the platform for the biosafety outreach and will provide general and an updated information to policymakers, professionals, researchers, educators and the general public on the provisions/issues under the Cartagena Protocol on Biosafety, the latest decisions under the Protocol and the latest developments at the international level on genetically and living modified organisms (GMOs and LMOs) and/or biosafety related issues with the aim to increase understanding of those issues in professionals and to raise public awareness and increase their participation at the national level in the decision-making procedures. Overall outcome of this portal should be better implementation of provisions and decisions under the Cartagena Protocol on Biosafety at the national level while improving awareness, flow and exchange of biosafety information among different stakeholders in Republic of Croatia. The portal should be finalized by the end of June 2010.

It is important to note that in the period from 2007 to 2009, two significant biosafety capacity-building projects have been conducted in the Republic of Croatia: the FAO project and the UNEP-GEF BCH project.

FAO Project „Capacity building of regulatory agencies for handling and monitoring GM crops, products and processed food“ has been carried out in the period from 2008 until October 2009. This project greatly contributed to the enhancement of the national capacity in the field of biosafety by training professionals from different competent national authorities (CNAs) that are regulatory bodies in the Republic of Croatia in technical and practical aspects of management and handling of GM seeds and food products in compliance with the national and international regulatory frameworks. The overall objective was to assist Croatia in building an overall human and infrastructural capacity within the principal regulatory bodies, to integrate hands-on experience of technical personnel and advance and strengthen the

partnerships of the CNAs. Under the Project three important workshops took place in the Institute for Seed and Seedlings in Osijek and a Study tour to the Agricultural Institute in Ljubljana, Slovenia. In addition, a Study on Coexistence of different pattern of agricultural production including conventional, organic and GM has been prepared by the FAO Consultant, Dr. Jeremy Sweet. The Study has been presented on the workshop that was held in April 2009 in Osijek. Under this Project and with the FAO funds, it was possible to completely equip the laboratory in the Institute for Seed and Seedlings in Osijek including the purchase of the new PCR. The total value of the Project was around 350.000 US\$.

UNEP-GEF BCH Project „Building Capacity for Effective Participation in the Biosafety Clearing-House“ started in June 2008 when the Ministry of Culture, Nature Protection Directorate as a National Executing Agency (NEA) signed the Memorandum of Understanding (MoU) with the UNEP-GEF. In order for the project to be approved there was a need to prepare a national strategy on the BCH which was done accordingly by the CPB and BCH NFP as well as the planning of all work and activities under the project, its implementation and logistics. Total value of this project was around 42.000 US\$. One part of funds has been used for purchasing some computer equipment and the major part of funds has been used for the organisation of six national BCH workshops which took place in the period from October until December 2008.

Each national workshop has been organized and tailored for different target audience and group of stakeholders. Special attention has been paid to the organization of the workshops for inspectors, custom and border officials as they have not been involved in any such kind of training before. That was the main reason of having these workshops as two-days long. These two groups of professionals had an additional opportunity to hear particularly tailored presentations for their groups given by the expert from Austria, Dr. Andreas Heissenberger. BCH workshops greatly contributed to the broadening of knowledge on provisions under the Cartagena Protocol on Biosafety as well as to better understanding and use of the BCH mechanism which is one of the key provision and tool for implementation of the Protocol. Through the practical hands-on experience and numerous different exercises that were selected separately for each group of stakeholders, they were able to learn about the possibilities of the BCH mechanism and to familiarize themselves with the proper usage of the BCH mechanism so they could implement relevant information from the BCH Central Portal in their every-day work related to GMOs and biosafety. The facilitators during the BCH workshop were CPB and BCH National Focal Point of Croatia and IT Regional Advisor, Ms. Vida Marolt from the United Nations Environment Programme (UNEP). There were total of 132 participants who attended the BCH workshops. This UNEP-GEF BCH Project was finished in March 2009 when a closing documentation has been sent to the UNEP.

Activities relevant to Biosafety Capacity-Building and Human resource development/training in the period from July to December 2007:

- In this period activities were focused on the preparation of the First National Report on Implementation of the Cartagena Protocol and the **Internal review on the national biosafety capacity-building needs and priorities** that has been taken by the CPB and BCH National Focal Point within the Ministry of Culture, Nature Protection Directorate.
- In addition, preparatory activities for the upcoming **UNEP-GEF BCH Project „Building Capacity for Effective Participation in the Biosafety Clearing-House“** took place as well. In order for this Project to be approved it was necessary to prepare a National Strategy on the BCH which has been done accordingly by the CPB and BCH NFP. Preparatory activities involved: decisions on number of UNEP-GEF BCH workshops under the Project, the programme

of work for each workshop, target audience and groups of stakeholders that will be invited to each workshop and preparing a selection of the supporting materials.

- „**TAIEX Workshop on GM food and feed**“ was held in Zagreb on 6 November 2007. The following presentations have been made: Introduction to the historical evolution of the EU legislative framework; GM Food and Feed; Traceability Rules and Procedure in case of crisis; Implementation of the existing framework; The Release into the Environment of a GMO; Official controls – Sampling, Laboratory Analysis and Analytical Techniques and GMO Detection Methods. More than 50 participants have attended this workshop.

Human resource development/trainings in 2008:

- The first **BCH workshop** for the members of the BCH Task Force Group was conducted on 8 January 2008 in Zagreb by the CPB and BCH NFP. Presentations have been made on the main features and provisions under the Cartagena Protocol on Biosafety and on the Biosafety Clearing-House with the information and virtual tour of the Central Portal of the BCH. Members of the BCH Task Force have got acquainted with the future designations for some of them as authorized users of the BCH and their new responsibilities as a consequence of such designations.
- „**TAIEX First Global Conference on GMO analysis**“ has been organized by the European Commission's DG Enlargement within the framework of the TAIEX Instrument and upon the initiative of the EC-DG Joint Research Centre (JRC) from Ispra. This conference was held from 24 until 27 June 2008 in Villa Erba, Como, Italy.

The conference addressed the science and technology underpinning GMOs, control and analysis of GMOs by bringing together international experts willing to share knowledge and participate in promoting international scientific dialogue across diverse yet interdependent areas such as sampling for GMO analysis, consistency of test results, result interpretation and reporting, and harmonising standards for detection of genetically modified traits.

During the Conference more than 78 presentations have been displayed simultaneously in one big auditorium and two conference rooms. Presentations have been split according to three main groups of the themes. The first theme „Requirements for the implementation of GMO analysis along the production chain“ included the following presentations: Sampling for GMO analysis along the seed, food and feed production and supply chain („from farm to fork“ and *vice versa*); Analytical procedures along the seed, food and feed production and supply chain and Results, interpretation and reporting. Second main theme was „Method development and technical aspects“. Under this theme there were the following presentations: Sample preparation and extraction and Methods of analysis. Third main theme was „Harmonisation, standardisation and accreditation – the way to quality assurance“. Under this theme the following presentations were held: Development, production and availability of reference material; Harmonisation needs at international and regional level and Traceability and already existing accreditation programmes. At this conference a poster session has been organized with more than 200 posters exposed.

At the last day of the Conference, the Open Forum and Workshop on Enlargement and Integration have been held in the afternoon. During this workshop the following presentations have been made: European legislation regarding GMO labelling, the Community Research and Development Information Service (CORDIS), TAIEX and its role in technical assistance and information

exchange and statements on the GMO labelling situations from Candidate Countries, European Neighbourhood Policy Countries, Russia and Middle East countries.

More than 400 participants have been following the Conference and other events and four of them were representatives from the Republic of Croatia representing the Ministry of Culture (Nature Protection Directorate), the Ministry of Health and Social Welfare and the Institute for Seed and Seedlings.

- **Biosafety Workshop** has been organized under the above-mentioned FAO Project and was held in the Institute for Seed and Seedlings in Osijek from 8 to 13 September 2008. This workshop consisted of four modules: Agricultural biotechnology and techniques; Risk analysis; GM Food and Feed Safety and Legal and trade aspects of biosafety. Under those modules, numerous presentations have been introduced, such as: Risk assessment of GM crops, Potential risks of GM crops, Risk Management and Surveillance of GM crops, Public perception, Traditional Food Safety Assessment, Concept and Principles of Safety Assessments of Foods derived from Modern Biotechnology, Codex Framework on Safety Assessment of GM food, Safety assessment of Toxicity and Allergenicity of GM food, Characterisation of genetic modification, etc. This workshop also included some case studies, so a group work and exercises have been conducted too.
- **Under the UNEP-GEF BCH Project, the following six national workshops have been held:**
 - Workshop organized for professionals from different national competent authorities (CNAs) took place on 2 October 2008. Total of 13 participants attended the workshop.
 - Workshop organized for participants working in the inspection services under different ministries and government institutions took place from 20 to 21 October 2008. Total of 35 inspectors attended the workshop.
 - Workshop organized for custom and border officials has been held from 25 to 26 November 2008. Total of 38 participants attended the workshop.
 - Workshop organized for scientists and professors who are working in different scientific disciplines at the University of Zagreb has been conducted on the 27 November 2008. Total of 30 participants attended the workshop.
 - Workshop organized for participants from non-governmental organizations and media took place on the 1 December 2008. Total of 4 participants attended the workshop.
 - Second BCH workshop for the members of the BCH Task Force Group was held on 12 December 2008 and was conducted by the CPB and BCH National Focal Point only. The main topic was responsibilities of each group of members and the procedure of registering information under jurisdiction of their own ministries/institutions into the Biosafety Clearing-House (BCH).

Human resource development/trainings in 2009:

- **„Regional Workshop on Risk Assessment of GMOs“** has been held from 9 to 10 February 2009 in Zagreb. That workshop was an outcome of a very successful collaboration between the Ministry of Culture, Nature Protection Directorate and the Environmental Agency from Vienna, Austria that provided the financial support for organizing this workshop.

This was a very important workshop as it was the first one of this kind organized in the Republic of Croatia with the main topic only on the risk assessment of GMOs with a guided work on two real dossiers. First study case was a review of renewal of authorization of GM maize (MON810) and the second study case was a field trial application of herbicide tolerant oilseed rape.

Two experts, Dr. Andreas Heissenberger and Dr. Michael Eckerstorfer were conducting the workshop and gave the following excellent presentations: Legal requirements for GMO risk assessment; Introduction to Risk Assessment procedures and guidelines; Introduction to dossier I: Application for placing on the market and cultivation of maize insect resistant MON810 (general overview); Field trials, permission and inspection; Introduction to the dossier II: Field trial of herbicide tolerant oilseed rape.

Every day a group work took place with the evaluation and interpretation of the data contained in each dossier. First day three issues have been considered and discussed in regards to the first study case: results for the assessment of expression of the cry1Ab transgene in MON810, the expression of potential environmental effects and the environmental monitoring plan. There was an interesting discussion on data submitted by the applicant and weak points in the application that need a further consideration and research.

Second day in the group work on the Field trial of herbicide tolerant oilseed rape two main issues have been considered and discussed: one was assessment of notification with regard to objectives of the trial and the submitted information relating to the release with the purpose of drafting conditions for the release and the second issue was assessment of notification with regard to monitoring and inspection of the trial with the purpose of drafting conditions for the release. In regards to the second study case, participants have found a number of relevant pieces of information to be missing from the notification.

- **„Eurofins International Seminar 2009“** took place in Paris (France) from 24 to 27 February 2009 and some participants from the Ministry of Health and Social Welfare attended this seminar.
- **„Key Stakeholder workshop“** was conducted under the above-mentioned FAO Project and was held in the Institute for Seed and Seedlings in Osijek from 21 to 22 April 2009. The main reason of conducting this workshop was a presentation of the „Study on Coexistence in Crop Cultivation in Croatia“ which has been prepared and presented by the FAO consultant, Dr. Jeremy Sweet. Minister of the Ministry of Agriculture, Fisheries and Rural Development gave an introduction speech and after there were presentations on Agricultural production and Seed production in Republic of Croatia. Dr. Sweet gave numerous presentations related to the Study and on issues that are of significant relevance to coexistence. More than 50 participants attended this workshop.
- **TAIEX Workshop „Harmonisation on GMO Detection and Analysis“** has been held in Istanbul, Turkey from 27 to 28 April 2009 in collaboration with the TUBITAK Marmara Research Centre.

The following presentations have been made by ten experts from the EU Member States and the Joint Research Centre (JRC): the EU legislation on GMO authorisation and on labelling provisions; Overview of JRC activities on enlargement, integration and capacity building towards global harmonisation of GMO analysis; The European Network of GMO Laboratories (ENGL) as a

platform for exchange of information; The role of the Reference Laboratory for GM Food and Feed in Europe; GMO detection carried out in the European Member States; Quality assurance for GMO testing laboratories; GMO sampling and specific requirements; Examples of enforcement of labelling provision in the EU Member States; Difficulties in the drafting of legislation according to the EU *acquis* – experiences from Bulgaria and Romania; GMO Analysis and Regulation in Georgia; Implementation of legislation on GMOs in Turkey; Status and experiences related to implementation of GMO legislation – perception from selected countries (Belarus and Georgia) and Setting up a GMO detection laboratory. There was a round table discussion on „Integration and Capacity Building“ and future collaboration with the ENGL network.

Two representatives from Croatia attended this workshop, one from the Ministry of Culture, Nature Protection Directorate and one from the Institute for Seed and Seedlings. A total of 51 participants have been invited to this workshop coming from 19 different countries. Some of them were the Candidate Countries, some belong to the European Neighbourhood Policy Countries, Russian Federation and some were countries from the Middle East.

- **„Hands on training“** workshop has been organized under the above-mentioned FAO Project and was held in the Institute of Seed and Seedlings in Osijek from 11 to 16 May 2009. This training of regulatory officials has been divided in three Modules: Testing plans, DNA extraction and the Polymerase Chain Reaction (PCR). There was a theory introduction for each module which was followed by the work in the laboratory with a lot of practical exercises. The workshop has been carried out by Mr. Benjamin Kaufman, Mr. Jean-Luis Laffont, Ms. Cheryl Dollard and Mr. Bruno Zaccomer.
- **Workshop „GM and non-GM supply chains: Their Co-Existence and Traceability“** was held in Paris from 2 to 5 June 2009. Participants from the Ministry of Health and Social Welfare attended this workshop.
- **Study tour** to the Agricultural Institute of Slovenia **„Advanced Methods and Technologies used for Detection and Quantification of GM in Seed, Food and Feed“** has been organized under the above-mentioned FAO Project and it was held from 4 to 14 August 2009. Only first two days have been dedicated to the theory, the rest was a practical training on using different methods and techniques for detection of GMOs in the laboratory. The experimental part of the work took place in the Seed Testing/Genetic Laboratories of the Crop and Seed Science Department. The laboratory is accredited by the International Seed Testing Association (ISTA) for analysis of the quality of seeds and since 2007 had an accreditation for detection/quantification of GMOs. The laboratory is also a member of the ENGL. Participants had also an opportunity to visit the Central Laboratories which are accredited by the French Accreditation Service (COFRAC) for the analysis of soil, animal feeds, honey, wine, spirits and the pesticide residues in agricultural products. This Study tour enabled five professionals to carry out effective inspection of GM products in Republic of Croatia and to introduce the techniques within their regulatory institutions.
- **TAIEX workshop on „Novel Food and GMOs“** has been supported by the European Commission/TAIEX and organized in collaboration with the Ministry of Health and Social Welfare. It has been held on 14 September 2009 in Zagreb. The following presentations have been introduced: Current situation in Croatia related to GMOs and Novel Food; Key elements

related to GMOs and Novel Food; Legislation on GMOs in the EU and GMO authorisation procedures under Regulation (EC) 1829/2003; Regulation (EC) No. 258/97 of the European Parliament and of the Council concerning Novel Foods and Novel Food ingredients (global overview); Authorisation procedures regarding the placing on the market of Novel Foods and Novel Food Ingredients (global overview); Authorization procedures regarding the placing on the market of Novel Foods and Novel Food Ingredients (the Industry perspective); Scientific risk assessment; Labelling – Presentation and advertising of Novel Food Ingredients - Health and Nutritional Claims; Nanotechnology in food production; An Industry Perspective and Practical Insight (What it is really like to make Novel Food Applications and the Current Revision of the Novel Food Regulation and Overview/Procedures Regulation (EC) 258/97. This workshop has been attended by 60 participants.

- **The Study tour „GMO-organization of control system, sampling, detection, placing on the market“** has been organized in collaboration with the Austrian Agency for Health and Food Safety. It was held in the Competence Centre for Biochemistry in Vienna, Austria from 12 to 16 October 2009. Participants were representing the Ministry of Health and Social Welfare, Croatian Institute for Public Health and Institute for Seed and Seedlings.
- **TAIEX Workshop „Handling applications for release of GMOs into the environment and placing GMOs on the market“** has been held from 12 to 13 November 2009 in Zagreb. This workshop was organised by the European Commission, Technical Assistance Information Exchange Instrument (TAIEX), DG Enlargement and in collaboration with the Ministry of Culture, Nature Protection Directorate.

The goal of this workshop was to introduce the national regulators, decision makers and the members of the biosafety scientific-advisory bodies (the Council for GMOs, the Committee for Release of GMOs into the environment and the Committee for contained use) to the procedure and steps in handling and reviewing the notifications and dossiers in order to take optimal decisions related to the introduction of GMOs into the environment and placing GMOs on the market.

Emphasis was put to present in details Part B and Part C of the Directive of the EU (2001/18/EC) and the differences between the two of them, to facilitate better understanding of the procedure of conducting risk assessments, to improve knowledge on different current guidance on risk assessment of GMOs (Cartagena Protocol on Biosafety, EFSA guidelines, Biosafety Assessment Tool (BAT), etc.), to receive some information in regards to the field trials within the European Union, to increase knowledge on the risk management measures and learn about experience of the Member States of the European Union on the post-market monitoring.

Twelve resource persons coming from different institutions within the Member States of the European Union and the European Food Safety Authority (EFSA) have accepted the invitation by TAIEX and they had their presentations. Topics that have been covered at this workshop were the following: Legal requirements for the risk assessment; Introduction to the Directive 2001/18/EC; Procedure and steps involved in the processing applications for deliberate release of GMOs into the environment (field trials) and placing GMOs on the market; Components of the risk assessment of GM plants by EFSA (EFSA Guidelines); Beyond general guidance: National risk assessment guidance to complement EFSA's guidelines; Transboundary movements of GMOs in the Cartagena Protocol on Biosafety and EU legislation (comparison); Introduction to the Regulation (EC) No. 1946/2003 of the European Parliament and the Council of 15 July 2003 on

transboundary movements of GMOs; Overview of existing/approved and authorized GMOs in the EU and useful resources of references; Presentation of the Common Format for the risk assessment under the Cartagena Protocol on Biosafety; Presentation of the Case Study (Bt corn MON810); Procedure of reviewing the risk assessment data based on the submitted information; Usual shortcomings in applications/dossiers; Field trials at the EU; Genetic Modification and their Management in the Czech Republic with special attention to concept of the risk management; Post-market monitoring (concepts and first experience in the EU); Risk management and role of decision makers and enforcement officials and Risk Communication. There were a total of 70 participants who attended the workshop.

Human resource development/trainings in 2010:

- **Conference on „Implication of GM-crop cultivation at large spatial scales“** has been held in Bremen, Germany from 25 to 26 February 2010. Several participants, representatives from the Ministry of Health and Social Welfare and some members of the Council and two Committees for GMOs attended this conference.
- **TAIEX Workshop „Post-release and post market monitoring of GMOs“** will be held on 15 June 2010 in Zagreb. It will be organized in collaboration with the Ministry of Culture, Nature Protection Directorate. So far, 68 participants have been registered.

The objective of this workshop is to introduce regulators and members of the biosafety scientific-advisory bodies: the Council for GMOs, the Committee for Release of GMOs into the environment and the Committee for Contained Use to the legal and scientific basis and European guidance, standards and recommendations for the methodology of the Post-Market Environmental Plan (PMEM) at the EU level. The overall objective of the workshop is to broaden knowledge and increase understanding of importance of conducting post-release and post-market monitoring of GMOs.

For that purpose, detailed proposal of issues that should be covered by this workshop has been prepared by the CPB and BCH NFP and they were the following: Introduction to the Council Decision of 3 October 2002 (2002/811/EC); Introduction to the Commission Decision 2003/701/EC; EFSA approach to the PMEM and experiences; Introduction to the „Ecological monitoring of GMOs“; Good Monitoring Practice and basic requirements for the PMEM; Conceptual differences: General Surveillance vs. Case-specific Monitoring of GM plants/crops; Monitoring report and networking, sharing experience and results of PMEM studies in the Member States of the EU and two Case studies (EU member states experience on post-release monitoring of Bt Corn MON810: Monitoring for Resistance in Target Pests and experience on post-market monitoring of either Oilseed rape (T45) or Sugar beet (H7-1). Emphasis should be put on the design, procedure and evaluation of the PMEM as well as on the necessary information and systems that are important for collecting, clustering and analysis of data from the PMEM studies.

- Croatia as a member country to the ENGL has been asked to organize a **Workshop on „Sampling and Detection of GMOs“**. This workshop should be held on 29 and 30 September 2010. Venue of the workshop has not been decided yet.

- Planning the **Regional Workshop „Management/Conduct of Field Trials and Post-release, Post-market and Post-Trial Monitoring/Management“** that should be held in 2011 and would last 3 days. Detailed proposal of the agenda has been prepared by the CPB and BCH NFP and submitted to the ICGEB for its consideration. In the case of positive outcome, the ICGEB will financially support organization of this workshop for more than 60 participants.
- Planning the TAIEX **„Workshop on Transboundary movement“** for 50 participants.
- Planning the **Study tour on Placing on the market GMOs, Labelling and Traceability** in Spain for 5 participants from Croatia.
- Planning the **Study tour on Sampling and Detection of GMOs** in Italy or France for 3 participants from Croatia.

Republic of Croatia still has some needs in regards to the trainings of human resources as some areas have not been covered at all with any type of trainings for far. Also, the equipment of the laboratory placed in the Croatian Institute for Public Health in Zagreb should be upgraded and new updated PCR should be purchased.

Type of new and additional trainings will be reflected in the separate submission of a revised questionnaire/common format on a „Capacity-Building Needs Assessment“.

This submission has been prepared by the CPB and BCH NFP of the Republic of Croatia. Zagreb, May 2010.

REPUBLIC OF CUBA

[27 January 2010]
[SUBMISSION: ENGLISH]

PRACTICAL EXPERIENCES AND ACHIEVEMENTS ON CAPACITY BUILDING ACTIVITIES

As part of UNEP/GEF's first capacity-building initiatives, the National Center for Biological Safety (NCBS) of Cuba participated from 1998 in the Pilot Phase of the UNEP-GEF biosafety projects for the Development of National Biosafety Frameworks, which aimed to allow participating countries to design and develop a national framework for the effective implementation of the Cartagena Protocol. During 2002-2007, Cuba also formed part of the series of UNEP-GEF demonstration projects for the implementation of these frameworks, which contributed to the consolidation of national biosafety structures. The fact that much of what was put into operation is in constant use, is undergoing updating and upgrading, is being disseminated nationwide and/or is considered durable and technically sound, is a demonstration of the usefulness and impact of the GEF projects.

Notwithstanding those progresses, there is a strong need for institutional coordination and capacity building around demands for technological resources, infrastructure and analytical tools primarily for LMOs identification and detection. Available capacity is therefore insufficient to stay afoot with all these tasks.

The tasks pending for a more effective rapport with the Cartagena Protocol, identified by the NCBS when the Implementation UNEP-GEF project was finalized, include:

/...

- (i) Maintaining a high rate of training in accordance with local needs,;
- (ii) Greater involvement and coordination with other entities relevant to biosafety
- (iii) Better infrastructure relating to LMO detection, in support of risk management and regulatory compliance, and for sustaining BCH participation,
- (iv) Improvement of our internal procedures concerning liability and redress.
- (v) Completion of some gaps concerning handling, transport, packaging and identification.

Current initiatives

Taking the above into account, we are currently involved in the preparation of a new UNEP/GEF project named *Completion and Strengthening of the Cuban National Biosafety framework for the Effective Implementation of the CP*.

For the elaboration of this project the NCBS undertook a strategic exercise in order to identify the main priorities, and which of them could be covered by this project.

As a consequence, the current project seeks to address some of the above issues by structuring itself around 4 main components: 1) Institutional coordination for regulatory, BCH and decision-making purposes; 2) Imports, exports and transit in relation to the Protocol, with emphasis of LMOs for food, feed and processing; 3) Human resources training; and 4) Scientific and technological capacities of National Competent Authorities. Although the project's components focus on the biosafety framework's weakest points, and do not cover the framework as a whole, they will contribute to the robustness of the complete framework. The rest of the identified needs are not going to be addressed by this project.

Given that in Cuba, the introduction of exotic species into the environment and related human health issues (exposure and consumption) are part of a wider system of biological safety, the proposed project will aid the country in the safe use of biotechnology by further strengthening its existing mechanisms for environmental protection and human safeguards.

Apart from the above project, we are preparing other one to be submitted to FAO. This project will allow getting assistance for designing, developing and implementing a post – release monitoring system of LMOs.

Main difficulties

Cuba's main barrier to adequately addressing those tasks is the financial constrains it faces in strengthening its existing National Biosafety Framework and responding to continuous training needs, given the blockade situation that has prevailed for decades, and the limited coordination among relevant authorities whose mandates and management decisions bear influence on biosafety. There are also technological constraints that limit Cuba's participation in the BCH, whereby greater technological capacity for connecting to and accessing the BCH central portal, and for eventually developing a national BCH, are needed.

In spite of having this situation, there are other issues that are not related to lack of funding and with which we have to deal with. Some of them are:

1. Primacy of scientific and economic criteria over safety issues.
2. Unawareness of safety culture issues.

3. Existence of some state regulatory bodies which are strongly involved in Biosafety activities, therefore, their competences can be overlapped.

How we deal with these difficulties, Initiatives undertaken with national resources

In matter of development of the human resources in general, and particularly to make that all those who are in charge of making decisions, change their mind on Biosafety-related topics, we have outlined a training program which includes Biosafety aspects aimed at executive personnel. In this respect, although it is included in the project as a component, we started to working on the holistic training program composed by tailor-made courses addressed to the different categories of target people, which include, in addition to the executive personnel, custom officers, university students in biosafety- related degrees, civil engineers, architects etc. In addition we have had coordination meetings with those state bodies strongly involved in Biosafety activities in order to set agreements about scopes, competences etc. In this case we have the Ministry of Public Health and the Ministry of Agriculture involved. We have also a National System of Biological Safety that it was created since 1996 and it is currently developed nationwide by having one or more representatives specialized in biosafety issues and located in each province of the country.

Lessons learnt

1. We have learnt that from the end of a Project to the beginning of another project, there always is a deadlock period in which achievements on capacity building can be threatened. Despite the efforts and the compromise of the government, the budget is not enough for the sustainability of most of the activities, mainly, the activities in which financial resources are the core component, this is the case of the technical infrastructure.
2. We have learnt also that the update of the necessities and priorities on capacity building matter and training necessities, are permanent tasks. In the case of training activities, knowledge about biotechnology in a general sense is strongly needed by the specialists of the regulatory agency, when this sphere is enhanced in our country. Cuba is currently able to orienting its capacity building priorities towards more technical necessities i.e. the design and operation of a laboratory for identification and detection of LMOs.
3. Finally we consider that the exchange of experiences at regional and sub regional levels constitutes a very important issue. It allows the common use of the capabilities developed by other countries of the region, due to the similarities in language, culture etc which enriches the experiences of all these countries. On the other hand, the exchange of information among regulatory agencies from developing countries and developed countries, by using the direct contact, would be very useful, especially for risk assessment and risk management process.

Opportunities for collaboration

Cuba can offer some opportunities for collaboration mainly focused on development of human resources, which means, training on Biosafety issues. Unfortunately our training program just can be developed in Spanish language. In illustration of this potential, Cuba has already offered collaboration to countries such as Venezuela, Paraguay, Bolivia, Dominican Republic and Guadalupe, to name a few, with the aim of strengthening local human resources in biosafety matters.

In addition we have developed some initiatives with Colombia which may result in a possible bilateral cooperation agreement regarding the design and the implementation of an international training course (a possible master degree) on Biosafety, aimed with emphasis at Latin-American countries.

CZECH REPUBLIC	[5 MARCH 2009]
	[SUBMISSION: ENGLISH]

Biosafety Capacity-Building Activities in the Czech Republic

1. Capacity building activities aiming at the Cartagena Protocol implementation have been developed in the Czech Republic within the following UNEP/GEF Projects:

- (a) Development of the National Biosafety Framework for Czech Republic (2002 – 2004;
- (b) Implementation of the Draft National Biosafety Framework for the Czech Republic (2006- 2010)
- (c) Add-on Project - Building Capacity for Effective Participation in the Biosafety Clearing House (2006-2008).

2. The first mentioned Project assessed the existing national capacity and role of responsible bodies. The results are summarised in the final Report “*National Biosafety Framework for the Czech Republic*” (Ministry of the Environment, Prague, March 2004).

3. The implementation project (2006 – 2010) aims to assist in implementation of adopted measures within the biosafety framework in the country. The implementing activities focus on five components of the National Biosafety Framework: Biosafety policy, Regulatory regime, Handling requests for permits, Monitoring of environmental effects and enforcement, Public information, participation and awareness. The Ministry of the Environment serves as the National Executing Agency. National Coordinating Committee (NCC) assists in coordination of scheduled activities and consists of representatives of authorities and institutions responsible for biosafety policy, regulations and monitoring and other important stakeholders (Ministry of Agriculture, Ministry of Health, Ministry of the Environment, universities, research institutions, NGOs represented by Greenpeace). A close cooperation has been developed with the Czech Commission for the Use of Genetically Modified Organisms and Genetic Products. The Project is supported (through co-financing) by the Ministry of the Environment, Ministry of Agriculture and Ministry of Health, which are the main sectors responsible for biosafety regulation in the Czech Republic.

4. The Add-on BCH Project resulted in establishing of the National BCH System. New website has been developed and serves for communication with CBD/CPB Secretariat and information sharing in English (www.mzp.cz/biosafety), whereas Ministry of the Environment website (www.mzp.cz – Environmental Risks – GMOs) offers information in national – Czech language.

5. Capacity building represents an important part of the Projects and corresponding activities have the following main forms:

6. Meetings with policy makers, inspection personnel, experts, researcher and NGOs. These serve for information exchange, enhancement of inter-sectoral cooperation and coordination of procedures and actions.

7. Workshops and trainings are focused mainly on enhancement of biosafety knowledge, latest development in related fields and adopted measures at global, regional and national levels, instruction for applicants, training of inspection personnel etc. Participants are different stakeholders according to the theme of the given action (administration officials, researchers, teachers, environmental educators, NGOs). In some of them regional experts participated. As to international organizations, besides UNEP cooperation mainly with FAO has been developed (Ministry of Agriculture, Czech Commission for Cooperation with FAO) resulting in organization of yearly workshops on topical biosafety issues for Central and East European Countries in Prague.

8. Publications and other information material have been edited on biodiversity and biosafety issues, including workshops Proceedings, survey of Terms on Genetic Resources and Biosafety (Czech – English) as well as posters presented on the occasion of various national and international conferences and workshops. In view of the focused group they were mostly published in Czech (with English summary). The list of publications is annexed.

Lessons learned

9. Development of the UNEP/GEF Projects revealed some prerequisites for reaching success and sustainability of adopted measures, among them mainly:

Cooperation among different sectors, as well as inside sectors (different departments, institution) and coordination of efforts, leading to better understanding of problems, integration of biosafety interest into national policy and sectoral programmes and to financial support of required procedures and actions.

Involvement of various stakeholders and enhancement of awareness on the issue.

Dissemination of information tailored to different stakeholders groups (publications, presentations, internet - Biosafety Clearing House).

Regional cooperation enabling exchange of information and experience.

EUROPEAN UNION	[15 MARCH 2010] [SUBMISSION: ENGLISH]

Notification SCBD/BS/CG/jh/64396, in the context of the decision BS-IV/3, invited Parties, other Governments and relevant organizations to provide information on their capacity-building activities.

The European Union and its Member States had cooperated in the development and strengthening on human resources and institutional capacities in biosafety for the purpose of the effective implementation of the Cartagena Protocol in developing country Parties as well as in Parties with economies in transition.

In this purpose were made the following activities during the reporting period:

European Union

Financial support:

- Financial support for regional training of trainers' workshops on identification and documentation of LMOs, including in Africa: since adoption of Decision BS-III/10, the European Commission has financially supported the CBD Secretariat in organising regional training of trainers' workshops aimed at familiarising national and local administrators with implementation of the documentation requirements agreed under the Cartagena Protocol.
- Financial support for the Green Customs Initiative: since adoption of Decision BS-III/10, the European Commission has financially supported the CBD Secretariat in liaising with the Green Customs Initiative in support of a wider implementation of documentation requirements agreed under the Cartagena Protocol.
- The European Union provided funds for the Integrated Project "Co-Extra"(GM and non GM supply chains: their CO-EXistence and TRAceability) which looked for integrated methodologies to trace GM materials along the food chain and to facilitate the coexistence of genetically modified, conventional and organic crops. Coordinated by the National Institute of Agricultural Research of France (INRA), the project was developed from 2005 to 2009 and included participants from Argentina, Brazil and Russia. At its final conference, held in June 2009, Co -extra presented the results of four years of scientific research that includes the following themes:
 - Managing gene flow including agricultural and biological containment techniques

- Sampling strategies, detection, identification and quantification of GM ingredients in crops, foods and feed supply chains (including detection of unapproved GMOs)
- Supply chains modelling, practical and economic (costs/benefits) aspects of coexistence and traceability in the food and feed supply chains
- Liability and redress issues associated with managing crop production and supply chains
- Coexistence and traceability practices around the world
- Technologies for effective supply chain management, including data integration and decision support systems (DSS)

All findings are available at the homepage of the project (<http://www.coextra.eu/>)

Training courses and workshops:

- Training Courses of the Joint Research Center (JRC) of the European Commission on the Analysis of Food and Feed Samples for the Presence of GMOs

Since 2000, a series of training courses have been organized to promote the diffusion of a harmonised approach in the detection and quantification of GMOs.

The specific objective of the training courses is to assist the staff of control laboratories to become accustomed with molecular detection techniques, and to help them to adapt their facilities and work programmes to include analyses to comply with worldwide regulatory acts in the field of biotechnology. Specific topics covered included

- a) DNA extraction from raw and processed materials;
- b) Screening of foodstuffs for the presence of GMOs by simple Polymerase Chain Reaction and by nested Polymerase Chain reaction;
- c) Quantification of GMOs in ingredients by real-time Polymerase Chain Reaction;
- d) Quantification of GMOs in ingredients by the Enzyme-linked Immunosorbent Assay.

Staff from more than 100 laboratories has been trained so far. Training courses are organised both in response to general needs and open to participants from EU and non EU countries laboratories as well as focused in response to special needs: support to EU Accession Countries in the context of the enlargement process, including Eastern European economies in transition; support for the diffusion of harmonised approaches in GMO detection in the Maghreb Region and in the Black Sea Region Countries.

- JRC/WHO Joint Manual on Analysis of Food Samples for the Presence of GMOs

The EU and the World Health Organisation have collaborated since 2000 in the organisation of training courses on detection techniques for GMOs in foods. The aim is to provide analytical biotechnology skills to food control laboratory staff and to promote the use of validated and harmonised methods for detecting, identifying and quantifying GMOs. As part of this joint effort, training courses

have been held in the WHO European Region, including Central and Eastern European economies in transition.

A manual has been developed to assist relevant laboratory personnel with a good level of analytical knowledge, but with no or little expertise in this specific domain to become accustomed with molecular detection techniques, and to help them adapt their facilities and work programmes to include analyses which comply with regulatory instruments in the field of biotechnology. The specific objectives of the project are:

- 1) to provide theoretical and practical information on the methodologies and protocols currently used
- 2) to assist in the diffusion and dissemination of skills in GMO detection and quantification, taking into account the context of the different working environments and individual needs.

Initiatives

- **European Network of Genetically Modified Organisms (GMO) Laboratories**

The European Commission's Joint Research Centre has acted as a catalyst for bringing national GMO laboratories together by establishing the European Network of Genetically Modified Organisms (GMO) Laboratories. The Network develops methods for tracing GMOs and provides free electronic access to this information to all interested parties, including from developing countries and economies in transition.

- **Global Conference on GMO Analysis**

The Joint Research Centre of the European Commission organised the first "Global Conference on GMO Analysis" in Como, Italy from 24-27 June 2008.

- **JRC report providing an "Overview of EU activities for the development and harmonisation of GMO detection methods and sampling procedures"**

This report that is available online in the Biosafety Information Resource Centre of the BCH (Record 43770) provides an authoritative overview of the latest state of play in sampling and detection methods. The JRC report is a living document with hundreds of embedded links leading to the latest state of the art information on the subject matter. It is an essential tool for all Parties to the Protocol that seek to implement the documentation requirements established under the Protocol.

Austria

Financial support:

- In February 2009 Austria funded a workshop on risk assessment, which was organized in co-operation with the Croatian Ministry of Culture. This 2-day workshop had approx. 40 participants from Croatia, Macedonia and Serbia, and dealt with risk assessment of GMOs with regard to field trials and commercial use. For these case studies real applications for two different species (maize and rapeseed) were used.

- In November 2009 Austria co-financed two workshops which were organized within a UNDP/GEF implementation project in Kuala Lumpur, Malaysia.
 - 1) The first workshop dealt with risk assessment, focused on testing the draft roadmap developed by the AHTEG. The workshop was aimed to train the Malaysian Biosafety Committee and was organized as mix of lectures and practical work in groups.
 - 2) The second workshop was a 5 days laboratory course aimed to train Malaysian laboratory staff in quantitative PCR techniques for LMO detection. This course also included theoretical background lectures and practical training, using real samples which were analyzed by the participants.

Both courses were very well organized by the local experts and the cooperation worked very well. Participants were very actively involved in the discussions as well as in the practical exercises. Both activities were well received and the feedback by trainers and participants was very positive.

Follow-up activities are currently discussed but are not very likely due to funding restrictions.

Initiatives

- The Austrian Government adopted in 2009 a strategic guideline on "Environment and Development" which was drafted by the Ministry of European and international Affairs in co-operation with the Austrian Development Agency and the Ministry of Agriculture, Forestry, Environment and Water Management.

This guideline also includes as one of the funding priorities assistance in the implementation of Multilateral Environment Agreements (MEA), e.g. the Cartagena Protocol. It also identifies biosafety as a key environmental issue in development cooperation.

As this guideline is very new, there are currently no examples for funding of biosafety capacity building projects. However, the inclusion of biosafety and MEAs in the overall development agenda can be seen as a major step towards possible funding of projects to assist developing countries in the implementation of the Cartagena protocol.

Germany

German development cooperation supports the implementation of the Cartagena Protocol with a focus on capacity building in developing countries. As a consequence of this commitment, Germany chairs the steering committee of the coordination mechanism for governments and organisations implementing or funding biosafety capacity-building activities, and co-hosted its third meeting, together with the government of Zambia, in Lusaka in 2007, and supported the participation of African Participants during the 5th meeting in Costa Rica and the 6th meeting Cambodia.

Initiatives

- Bilateral financial support and technical cooperation:

German Development Cooperation started with the implementation of projects in 2003.

- Pilot projects within the programme "Implementing the Biodiversity Convention"

Most of them have been implemented as pilot projects within the programme entitled "Implementing the Biodiversity Convention". For example, cooperation with the Chinese Nanjing Institute of Environmental Science and the Chinese State Environmental Protection Administration (SEPA) started in 2003 and entered into a second phase until the end of 2011. The first phase focussed on enhanced data management relevant to biosafety, fostering access to biosafety-relevant information for decision-makers and promoting public participation in biosafety decision-making. The current focus of the project lies on implementing the already developed public participation mechanism and developing a biosafety course, the national review process of the Biosafety law, in addition to consolidating the impacts achieved such as expertise enhancement through further international workshops and the establishment of a permanent international biosafety forum.

Furthermore, in 2008 support has been given to the Burkinabe NGO *Association pour la Recherche et la Formation en Agro-écologie* (ARFA) in Burkina Faso and the Swiss Réseau Interdisciplinaire Biosécurité (RIBios) to support the national discussion process towards the implementation of the Cartagena Protocol.

- Support for the African Union

German Development Cooperation also supports the African Union in matters of biosafety by means of a regional project, since 2003 until the end of 2010.

The African-German cooperation is therefore aimed at providing the AU Commission with the capacities it needs to advise its member states competently on structuring national biosafety control systems.

In the context of this cooperation, a biosafety office has been set up at the AU Commission headquarters in Addis Ababa to support the African biosafety process at various levels. An African strategy for long-term biosafety capacity building has been worked out with the member states, which includes the following elements:

- Establishing and strengthening institutional frameworks
- Awareness-raising and biosafety information exchange
- Capacity building and preparedness for negotiation
- Policy and legal frameworks
- International cooperation
- Sustainability mechanisms

The African model law is also currently being revised. Regional workshops were conducted in 2009, specifically to discuss how the strategy should be

implemented, and which elements still need to be incorporated in the model law. In addition, the AU is also helping to prepare the African delegates for the Cartagena Protocol negotiations by offering 2-day preparatory workshops, at which delegates have the opportunity of forging a joint African position.

Another important component of the AU's work is to provide information material on different aspects of biosafety in the four official AU languages of English, French, Arabic and Portuguese. This is necessary because most of the relevant information is currently only available in English. A homepage for the project is also simplifying access to information.

(http://www.africa-union.org/root/au/AUC/Departments/HRST/biosafety/AU_Biosafety.htm)

The biosafety office is currently being institutionalised in order to incorporate it within the AU on a long-term basis. The realization of two trainings on Risk Assessment and Risk Management is among the key tasks for the project in 2010.

- Multilateral support:

- GEF

- In addition to these bilateral activities, as the third largest donor to the Global Environment Facility (GEF), Germany has taken an active part in the development of the GEF Biosafety Strategy.

Italy

Training courses and workshop

- Sponsorship and Financial support of Ministry of the Environment for Marche Polytechnic University in Ancona – UNIDO for international workshop since 2008.

The specific objective of the training courses have been in recognition of to need, the establishment of network of regional centers providing comprehensive training in biosafety by the UNIDO e- Biosafety, comprising of the University on Concepción (Chile), the University of Malaya Kuala Lumpur, university Ghent, Marche Polytechnic University in Ancona and Pontical Catholic University of Minas Gerais Belo Horizonte Brazil.

- Sponsorship and Financial support of Ministry of the Environment to refer workshop, joint whit International Centre for Genetic Engineering and Biotechnology:
 - Introduction to Biosafety for the Environmental Release of GM Crops: Evaluation of Scientific data and Risk Assessment Dossier” held in Cà Tron di Roncade Italy (May 2008)
 - “Theoretical Approach and their Practical Application in the Risk Assessment for the Deliberate Release of genetically modified plants” held in Cà Tron di Roncade Italy (October 2009).

Netherlands

Financial support:

- Besides regular and voluntary support for CBD activities, the Netherlands government contributes to Biosafety-related capacity building via two main tracks:
 - **Multilateral institutions.** The Netherlands, as a major donor to GEF and its implementing agencies, provides support through these institutions also for their Biosafety-related capacity building programmes;
 - **Development co-operation programmes in the field of Science, Technology and Innovation (STI), including Biotechnology and Biosafety for approximately US\$ 3,800,000 per year.**

Initiatives:

- **Regional Agriculture and Environment Initiative Network (RAEIN-Africa).** RAEIN-Africa is a subregional network with partners in 14 countries in Southern Africa. The Netherlands provides funding for a programme on Biosafety and Environment, including activities in the field of stakeholder awareness, capacity building for risk assessment and risk management, policy development support and generation of research data. In 2010 the Netherlands will also contribute to the activities of RAEIN-Africa in the field of socio-economic considerations in the region;
- **Africa Technology Policies Studies Network (ATPS).** ATPS is a subregional network with partners in 16 countries in Sub-Saharan Africa. ATPS supports Science, Technology and Innovation policy through mobilisation and organisation of stakeholders, research and linking of practitioners with policy-makers. ATPS receives funding for a biotechnology project in sub-Saharan Africa (SSA) that supports the regional NEPAD-IFPRI African Policy Dialogues on Biotechnology and provides guidance to the participating governments on developing biotechnology and biosafety guidelines;
- **Agribiotech Foundation (ABF) India.** The Netherlands contributes financially to a programme aiming at tailor-made biotechnology for smallholder farmers in Andhra Pradesh, which addresses also enabling policies for biotechnology, such as with regard to intellectual property rights and biosafety;
- **Programme for smallholder biotechnology development in the Andean region (PBA-Colombia, PREDUZA).** Financial support is provided for a programme aiming at tailor-made biotechnology for smallholder farmers in Colombia, Bolivia, Peru, Ecuador and Venezuela. The programme addresses also enabling policies for biotech, including intellectual property rights and biosafety.

Spain

Training courses and workshops:

- The Spanish National Institute for Agricultural and Food Technology and Research (INIA) and the Spanish Agency for International Cooperation and Development (AECID) organized in Santa Cruz de la Sierra (Bolivia) in

November 2008 a training of trainers course on biotechnological strategies in agroforestry species.

One of the main cores of this course was the biosafety, being discussed the following subjects:

- Transgenic Crops: Current Status and marketing.
- Biosafety: Surveillance, control and monitoring plans for GMOs
- Public perception and coexistence.
- Risk assessment of genetically modified organisms.

The course took place at one of the Spanish Cooperation Training Centers in Santa Cruz de la Sierra (Bolivia) and was co-financed by the AECID and the INIA: the INIA paid the cost of the teaching and the AECI the accommodation and maintenance.

The course of one week, with 30 teaching hours and roundtables, was assigned to graduates with experience in different areas, who are active in research centers, universities or companies in Central and South American countries.

Financial support:

- The Government of Spain has made in 2009 a limited contribution to the Voluntary Fund to support developing country Parties and Parties with economies in transition to pay for the use of experts selected from the Roster of Experts, as it was requested at the fourth meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety.
- The Government of Spain co-financed a regional training on the identification and documentation of living modified organisms for Latin America and the Caribbean region, from 23 to 27 November 2009. The main objective of the workshop was to introduce participants to the requirements of the Cartagena Protocol on Biosafety regarding the identification and documentation of living modified organisms and to techniques and methodologies that may be used to ensure the implementation of these requirements.

Sweden

Financial support:

- The Swedish International Development Cooperation Agency (Sida) funded Eastern African Regional Program and Research Network for Biotechnology, Biosafety and Biotechnology Policy Development (BIO-EARN) started in 1999. Phase I and II (1999-2005) focused on capacity building, by supporting PhD scholars from the region to undertake their studies in Sweden. The third phase (2006-2009) has focused on support for research being undertaken by these scholars and their collaborators when they returned to their home institutions in Eastern Africa. This phase focuses on biosciences R&D in agriculture and the environment, with support to several research consortia linking countries in the region.

The Program has involved some 35 institutions and more than 100 scientists from four Eastern African countries (Ethiopia, Kenya, Tanzania and Uganda) and

partners from Sweden. The Program has distinguished itself by combining several aspects of biotechnology development (agricultural, environmental, biopolicy and biosafety) within one Program. The BIO-EARN Program has also generated a number of outputs (products, processes, knowledge and information (publications)) and a network of researchers and research capacities built to enable timely response to current and future problems which require collaborative regional approach.

- Sida has decided to support a new program

“Bio-resources Innovations Network for Eastern Africa Development (Bio-Innovate)” during the period 2010-2014 with an amount of SEK80 million (US\$10.67 million).

The new program builds on the the achievements of Sida supported Bio-Earn programme (1999-2009) and will be implemented through a Competitive Grant scheme supporting application for regional multi-disciplinary biosciences and product-oriented innovation projects in eastern Africa (Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda).

The Bio-Innovate Program will focus on delivering new products through bioscience innovation systems involving a broad sector of actors, including scientists, the private sector, NGOs and other practitioners. The program will use modern bioscience to improve crop productivity and resilience to climate change in small-scale farming systems, and improve the efficiency of the agro-processing industry to add value to local bio-resources in a sustainable manner. Bio-Innovate will be user-, market- and development-oriented in order to make a difference on the ground in poverty alleviation and sustainable economic growth.

United Kingdom

Financial support:

- The UK’s Department for international Development (DfID) provided financial support for a UNEP-GEF Biosafety Unit study in 2007. The purpose of the study was to examine national experiences with the integration of socio-economic considerations in biosafety decision-making processes. Under the initiative, an annotated bibliography of peer-reviewed and “grey” literature related to socio-economic considerations in biosafety has been assembled and will made available through the Biosafety Clearing-House (BCH). A draft questionnaire has also been developed by a panel of experts to document National-level experiences, needs and examples. The results of the questionnaire will be used to develop a toolkit module on socio-economic considerations in the context of article 26 of the Protocol.

EUROPEAN UNION (ADDITIONAL)	[7 MAY 2010] [SUBMISSION: ENGLISH]
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Additional information to the response to notification 2008-078: European Union and its Members States submission of information on capacity building activities.

Decision BS-IV/3

European Union

Training courses and workshops

TAIEX Workshop, INFRA 33553

Handling applications for release of GMOs into the environment and placing GMOs on the market, Zagreb, Croatia, 12 to 13 November 2009, organised in co-operation with the Nature Protection Directorate of the Croatian Ministry of Culture

Proposed action: workshop on the EU legislation on GMOs (including aspects of the transboundary movements). Has been included the presentation "Transboundary movements of GMOs according to the Cartagena Protocol on Biosafety and EU legislation (comparison)", by Ana Maria COMANOIU, Ministry of Environment, Romania.

Target Audience : Officials from within the Ministry and members of the biosafety advisory bodies (the Council for GMOs, the Committee for Release of GMOs into the environment and the Committee for contained use) and other interested authorities.

More information at http://ec.europa.eu/enlargement/taiex/dyn/taiex-events/library/detail_en.jsp?EventID=33553

MALAYSIA	[10 MARCH 2009] [SUBMISSION: ENGLISH]

Update on Ongoing and Planned Biosafety Capacity-Building Projects/Initiatives in Malaysia

The Biosafety Act was passed by Parliament in July 2007. In April 2008 the Government approved the formation of a Core Group on Biosafety tasked with the responsibility of implementing the Biosafety Act whereby some 25 posts were created. Consistent with the objective of the government to make biotechnology an area for generating new income, several enabling activities have been carried to make the Biosafety Act a more friendly piece of legislation. In this regard regulations have been drafted where detail have been spelled out. In addition a list of exemptions has also been. Several elements in relation to timeliness have also been prepared which could be included in the standard operation procedures of the Biosafety Department.

To date several awareness seminars have been carried out. In 2008 a Workshop on Risk Assessment and Risk management of Transgenic Insects was carried and on 11-13 March 2009 another Workshop on Transgenic Crop Plants has been planned. The University of Malaya also offers a master degree course on biosafety in cooperation with UNIDO. We are now in the process of finalizing our website on biosafety. The GEF project on biosafety has been very useful in this regard.

One of the challenges for the future is to work with the private sector to enable resources to be optimized particularly in building capacity on biosafety.

MEXICO	[11 MARCH 2009] [SUBMISSION: ENGLISH]

**Update on capacity building activities in Mexico since the India meeting in 2008.
March 2009**

A second phase national project (2006-2009) on capacity building towards aiming on the implementation of the Cartagena Protocol has almost been completed. This was a Mexican government financed project but through the UNDP agency in Mexico (given the previous good experience obtained with UNDP through the GEF project on capacity building 2002-2005).

In this second phase the Ministries of Agriculture (SAGARPA), Environment (SEMARNAT), Health (SALUD) and CONABIO have been participating with the Coordination of the Inter-secretarial Commission on Biosafety and Genetically Modified Organisms (CIBIOGEM). Health for example commissioned through a public call the study that detected and quantified the different varieties contained in samples of the 8 million Tons of maize imports in the different ports of entry of the country to the GMO detection lab of the National University (UNAM). While CONABIO has for example used these funds to validate its ecological niche prediction maps used as part of its risk assessment methodology for cotton, brassicas, cucurbitas and pine trees.

Mexico has been putting efforts into creating a network on monitoring that includes a detection labs network at the national level, although these are still at an early stage of development. There is also an initiative from the Advisory Scientific Council to Start a Research Network on GMOS.

Mexico has also been giving capacity building at an institutional level to Colombia, including socioeconomic issues as well as risk assessment and database usage. Capacity building was also included in the UNDP project commissioned to UNAM by the Ministry of Health. This effort included also the personnel from the Ministry of Agriculture (SAGARPA). In that project, DNA quantification and identification technologies, manuals, as well as hands-on work on DNA extraction, amplification and quantification were included as part of the training of government officials.

Twenty new public servants have been hired by the Ministry of Agriculture to deal with Biosafety issues those include monitoring, risk assessment to plant and animal health, and inspections for law enforcement provisions. A significant amount of resources in comparison with previous years had being directed to monitoring activities and inspection.

SOUTH AFRICA	[11 MARCH 2009]
	[SUBMISSION: ENGLISH]

Country Report On Biosafety Capacity Building: South Africa
Prof. C.D. Viljoen

An Environmental Biosafety Cooperation Project has been established between South Africa and Norway. One aspect of this involves biosafety research between the GMO Testing Facility (University of the Free State, South Africa), researchers from the University of the North West and Fort Hare, South Africa and GENOK (Centre for Gene Ecology, Norway). The aim of the biosafety project is to improve capacity to conduct research, monitoring and assessments on the environmental impacts of GMOs used in agriculture as well as improved biosafety management and research through focusing on post release monitoring research of GM maize in terms of gene flow, impacts on target and non target insects as well as the microbial soil rhizosphere.

An additional aspect of the South Africa-Norway Cooperation Project is to hold a Biosafety workshop: “Holistic Foundations for Assessment and Regulation of Genetic Engineering and Genetically Modified Organisms”, presented by the GMO Testing Facility (SA) and GENOK (Norway), and will be held in Bloemfontein, South Africa from 28 June 2009 to 03 July 2009 (english.genok.org or www.ufs.ac.za or www.sanbi.org) for approximately 65 participants. The workshop targets participants from countries in Southern Africa and is designed to provide policy makers, regulators, scientists and NGOs with holistic training in issues of biosafety including the potential impact on the environment and human health, regulatory systems, risk assessment and risk assessment review as well as LMO detection.

In addition, SANBI (South African National Biodiversity Institute) has been mandated to oversee post release monitoring in South Africa. A workshop was held to establish a frame work for post release monitoring in South Africa from 4-7 November 2008.

Biosafety SA, was established to support biotechnology innovation by ensuring the development of safe sustainable biotechnology products. Biosafety SA aims to act as a facilitator to bring the different components required to take a biotechnology product from development through to commercialization.

SUBMISSIONS BY ORGANIZATIONS

ASEAN CENTRE FOR BIODIVERSITY	[11 MARCH 2009]
	[SUBMISSION: ENGLISH]

Background

The **ASEAN CENTRE FOR BIODIVERSITY** (ACB) is an intergovernmental and international regional centre of excellence of the Association of Southeast Asian Nations (ASEAN) which aims to create, promote, and develop links with the public, private sector, civil society, international development institutions, and donor community for the sustainable use of biodiversity.

ACB's *raison d'être* is to build strategic networking and partnerships so that resources could be mobilized optimally to augment effective programmes and enable knowledge management. The key outcome is to achieve socially responsible access, equitable sharing, utilization and conservation of natural ecosystems and the biodiversity they contain for the present and future generations of ASEAN Member States (AMS).

The ACB is managed by a Governing Board, which is composed of the ASEAN Senior Officials on the Environment (ASOEN) and the Secretary-General of the ASEAN.

ACB's scope of activities covers a wide range of thematic areas pertaining to the key focus areas for sustainable use of biodiversity resources. Specific to the area of capacity building for biosafety, hereunder are the modest initiatives of the Centre:

Southeast Asian Workshop on Risk Assessment of GMOs/LMOs and Enforcement of Biosafety Regulations (4-6 December 2007, Malaysia)

The South East Asian Workshop on Risk Assessment of GMOs/LMOs and Enforcement of Biosafety Regulations was held from 4-6 December 2007 in Kuala Lumpur, Malaysia. It was organised by the Ministry of Natural Resources and Environment, Malaysia and Umweltbundesamt – Federal Environment Agency, Austria, in collaboration with the ASEAN Centre for Biodiversity, Third World Network and the NRE-UNDP-GEF Biosafety Capacity Building Project.

Many countries in the South East Asian region are in the process of developing or implementing their biosafety frameworks, policies and laws. As these systems are set in place, capacity is needed in order to undertake scientific risk assessments of GMOs/LMOs and to enforce biosafety regulations, requiring monitoring, inspection and detection capabilities.

The objectives of the workshop were to:

- build capacity in crucial areas related to biosafety implementation
- provide training in scientific risk assessment of GMOs/LMOs
- increase knowledge in issues necessary for the enforcement of biosafety regulations, such as inspection and detection

- learn from the biosafety implementation experiences of other countries in the region

Workshop sessions focused particularly on GMO/LMO scientific risk assessment, including practical examination of case study dossiers, and enforcement issues, such as inspection and detection. The workshop also provided an opportunity for participants to share regional experiences in biosafety implementation.

Workshop on Risk Assessment of GMOs/LMOs and Enforcement of Biosafety (22-24 June 2008, Cambodia)

Biosafety is a term coined to describe efforts to reduce the potential risks that may be caused by biotechnology and its products such as GMOs and LMOs. It was identified as a critical issue by the Convention on Biological Diversity (CBD) in 1992. Years later, the Cartagena Protocol on Biosafety was adopted in 2000 to ensure that while maximum benefits are reaped from biotechnologies, adequate safety measures are in place to guard against possible risks to humans and the environment.

Within the ASEAN region, countries initiated the same efforts to anticipate these risks through the enactment of national policies. The ASEAN Centre for Biodiversity (ACB) is at the forefront together with its partner ASEAN Member States (AMS) in the advancement of the Protocol.

In December 2007, a “Workshop on Risk Assessment of GMOs/LMOs and Enhancement of Biosafety Regulations” was held in Malaysia. This activity was jointly organized by ACB and the Ministry of Natural Resources and Environment of Malaysia in collaboration with the Federal Environment Agency of Austria, Third World Network, and the UNEP-GEF Biosafety Capacity Building Project. The successful workshop has identified the need to continue similar capacity building activities to discuss broader biosafety issues in the ASEAN context.

In fulfilment of the recommendation, ACB and the Ministry of the Environment of Cambodia have organized a follow up “Workshop on Risk Assessment of GMOs/LMOs and Enforcement of Biosafety Regulations” on 22-24 June 2008. The goal of the workshop was to enhance regional capacity, promote better understanding, and strengthen cooperation in the ASEAN region by providing a venue for sharing up-to-date scientific information on the emerging areas of biosafety and risk assessment. The workshop had four (4) sessions and was attended by over 40 participants from the AMS, ASEAN Secretariat, and ACB.

At the end of the activity, participants made recommendations mostly addressed to ACB. Some of these suggest that ACB shall: lead the process in the preparation of the Regional Guidelines on Risk Assessment; collect information on available methodologies, criteria, and procedures on risk assessment; and compile related national policies for sharing with other ASEAN countries to aid in the development of their national policies on biosafety.

Regional Workshop on Biosafety Capacity Building Activities (19-22 November 2008, Vietnam)

Over the last two years, the ASEAN Centre for Biodiversity (ACB) has organized or cooperated to organize a series of regional workshops on biosafety in order to enhance cooperation at regional level on biosafety management. The workshops focus on regional cooperation on risk assessment and risk

management of GMOs to concretize orientations for and identify more opportunities for regional cooperation.

The Vietnam Environment Protection Agency supports ACB's activity on risk assessment and management by organizing a regional workshop in Da Lat, Vietnam. The follow-up workshop focused on:

- Biosafety management framework of ASEAN member countries.
- Risk assessment, risk management, and development of ASEAN Guidelines for managing GMOs/LMOs;
- Monitoring and enforcement of GMOs and related products.

Approximately 50 participants from all over Vietnam and across the ASEAN region participated in the workshop. Majority of participants were attendees of the past two workshops on risk assessment and management organized by ACB. In addition, Resource people from UNEP, Governments of Australia, and Austria as well as from Monsanto, CropLife International, and the US Environment Protection Agency and Department of Agriculture were present.

ASEAN Regional Guidelines for Risk Assessment of GMOs/LMOs

Because risk assessment should be carried out on a case-by-case basis, it is vital to evaluate such assessment from a specific country perspective and bring it into the regional level. For the case of ASEAN member states (AMS), risk assessment should be undertaken with inputs from ASEAN nationals with appropriate qualification and experiences in relevant fields. With assistance from its partners, the ASEAN – through the ASEAN Centre for Biodiversity (ACB) with financial assistance from the European Union – requires an effective regional mechanism and guideline that coordinate the regional collective actions so that biosafety and risk management protocols for genetically-/living-modified organisms are mainstreamed in both the regional and national development agenda.

At present, ACB is engaged in coming up with practical guidelines to implement biosafety regulations and risk assessment protocol in the ASEAN region; validate the guidelines and pilot test the Guidelines among AMS; and undertake further capacity building activities on risk assessment for AMS.

ASIA-PACIFIC ASSOCIATION OF AGRICULTURAL RESEARCH INSTITUTIONS (APAARI)	[27 January 2010] [SUBMISSION: ENGLISH]
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APAARI activities on biotechnology and biosafety capacity building in Asia- Pacific

*J. L. Karihaloo
Asia-Pacific Consortium on Agricultural Biotechnology, New Delhi, India*

The Asia-Pacific Association of Agricultural Research Institutions (APAARI), (www.apaari.org) established in 1990 at the initiative of FAO and the National Agricultural Research System (NARS) of Asia-Pacific, is an apolitical, neutral, non-profit forum of Agricultural Research Institutions in the Asia-Pacific region, with a 'Mission' to promote the development of national agricultural research systems in the Asia-Pacific region through facilitation of intra-regional, inter-institutional, and international cooperation/partnership. Its Headquarters is at the FAO Regional Office for Asia-Pacific in Bangkok, Thailand. One of the programs

of APAARI, the Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) (www.apcoab.org), serves as a neutral forum for the key partners engaged in research, development, commercialization and education/learning of agricultural biotechnology as well as environmental safety in the region. The major focus of APCoAB activities is to:

- Convince national policy makers regarding potential benefits of agricultural biotechnology to the society;
- Capacity building through consultations, conferences, public fora, workshops and trainings;
- Facilitate publication of regional findings and successes in conventional and advanced biotechnology for knowledge dissemination and technology transfer;
- Create public awareness and facilitate information sharing regarding benefits and concerns about genetically modified organisms.

Capacity building activities in biotechnology and biosafety are carried out by APCoAB through: i) organization of expert consultations/high level policy meetings/workshops in member countries; ii) organization of training programs; iii) publication of status reports on commercialized agricultural biotechnologies in the region; iv) compilation and dissemination of information on biosafety regulations and issues with particular reference to the Asia-Pacific region. Some of the more recent activities of relevance to biosafety are listed below:

Expert Consultations/Meetings

- High Level Policy Dialogue on “Biotechnology for Food Security and Poverty Alleviation: Opportunities and Challenges”. 7-9 November 2005, Bangkok, Thailand.
- Workshop on “Biosafety Regulations for Transgenic Crops and the Need for harmonizing them in the Asia-Pacific Region”. 31 July -2 August 2006, ICRISAT, Hyderabad, India.
- Brainstorming Sessions on “Models of Public-Private Partnership in Agricultural Biotechnology”, 7 April 2007, New Delhi, India.
- Expert Consultation on “Agricultural biotechnology for Promoting Food Security in Developing Countries”, 20-22 August 2008, Malaysia.

Publications

- Commercialization of Bt Corn in the Philippines (2005)
- Bt Cotton in India- A Status Report (2006)
- Biosafety Regulations of Asia-Pacific Countries (2008)
- Bt Cotton in India- A Status Report, 2nd Ed. (2009)

Web based information dissemination (available at: www.apcoab.org)

- Database on agricultural biotechnology institutions of Asia-Pacific region.
- Biosafety regulations of Asia-Pacific Countries.
- News and events on agricultural biotechnology and biosafety developments.
- Downloadable APCoAB publications and meetings proceedings.

The above listed expert consultations and group meetings have made several biosafety related recommendations that represent consensus opinion of a wide spectrum of stakeholders concerned with agriculture in the Asia-Pacific region. It is acknowledged that biotechnology is a powerful tool for agricultural development and can help in alleviating hunger and malnutrition. At the same time, there is a need for developing appropriate systems for safe application of biotechnology as provided under the Cartagena Protocol on Biosafety.

Concerns have also been expressed over the lack of science-based public awareness and education programs on biosafety in the region. Creating awareness and building capacity in information generation and dissemination have been identified as high priorities to promote informed public participation and decision making. Towards this end, following recommendations have been made (for details please see http://www.apcoab.org/documents/bfs_pub.pdf):

Creating awareness by improving communication

- Train young scientists as communicators, not just in the field of biotechnology but also on issues of agriculture, food security and environmental safety.
- Organize meetings/workshops with the policy makers in the Asia-Pacific region on food security, biotechnology and regulatory management issues.
- Arrange discussions between scientist, CSOs, farmer organizations and consumer groups to foster understanding and cooperation between all stakeholders.
- Develop farmer-scientist linkages and cooperation by conducting field visits, seminars etc.
- Set up scientific academia and communication units at the national level to assist in awareness creation.

Creating awareness through education

- Include biotechnology in school syllabi providing factual information about its usefulness and safety aspects.
- Develop educational tools including websites on GM technology, safety of GM crops, IP and regulatory systems.

Other proposed actions

- Strengthen institutional infrastructure, capacity, and legislative and administrative frameworks.
- Establish regional and subregional collaborations for biosafety capacity building and regulatory harmonization.
- Collaborate in international and regional fund raising efforts.
- Build technical expertise in specific areas like: risk assessment and management; sampling and GMO detection, detecting adventitious presence of transgenic seeds in gene banks, communication technologies and information handling and sharing

With its present membership of 48 organizations/institutions spread throughout Asia and the Pacific and comprising NARS, international agricultural research centres, civil society organizations, farmer associations, private sector, and other regional fora, APAARI is in a unique position to partner the widest possible range of stakeholders in the region. These linkages have been effectively utilized to develop regional consensus on a wide range of issues related to agricultural research policies, priorities and strategies, besides biotechnology and biosafety as detailed above.

<p>INTER AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE</p>	<p>[2 FEBRUARY 2010] [SUBMISSION: ENGLISH]</p>

The purpose of the Hemisphere Biotechnology and Biosafety Program of IICA (HBPP) is to facilitate mechanisms for the development, management **and safe use of agro-biotechnology in order to promote competitive and sustainable** agriculture in the Americas. Its mission is to identify and

promote opportunities for the execution of activities between all interested parties, using available resources and existing institutional (national and regional) channels.

Our work can be summarized mainly into three lines of action:

- Development, implementation and dissemination of Policies and Regional Strategies
- Promotion of agro-biotechnology information and Technical and Scientific Capacity Building
- Support for international negotiations and agreements related to agro-biotechnology and biosafety

Since 2004, the HBBP has supported the design of policies in biotechnology through methodologies which includes elaboration and consulting of regional strategies of biotechnology in all countries of Americas. So far, some progress has been made in the Andean, Central and Caribbean regions. With the development of regional strategies and the formulation of regional projects oriented to development and use of biotechnology and biosafety. For the Central Region, a study on the status of Biosafety was made, and will be used for training in a workshop directed to the Ministers of Agriculture in the Region. For the Caribbean, IICA is in the process of consolidating a technical network on Biotechnology which will have specific projects to improve the quality of planting material.

In 2009, the HBBP has developed a proposal of Communication Strategy on Biotechnology and Biosafety. Its main purpose is to disseminate and communicate adequately science-based information about agro biotechnology and its products. This effort is being directed to key stakeholders such as consumers, policy makers, biotechnology researchers, teachers, farmers' organization and journalists, in order to enable them to make informed decisions and influence them in a positive way on their perception of this technology. So far, the proposal has been adopted by the Andean region, where IICA will start a series of activities related to the strategy.

In the same fashion, the HBBP has generated, a series of technical documents reflecting the development of biotechnology in the hemisphere as well as its impact, policies, opportunities, risk, challenges, adoption, and implications for countries. For 2010, our office is planning to publish at least two technical documents relevant to risk assessment in LMO for Food, Feed and Processing, and Low Level Presence (LLP). These documents will also serve as reference materials for 2 workshops on the same topics that IICA is organizing.

Since 2006, HBBP has been organizing a series of Preparatory Meetings around the negotiations of the Cartagena Protocol of Biosafety. The main purpose of these meetings is to share information prior negotiations of articles programmed in the agenda of this forum. During 2009, IICA has organized at least 4 meetings related to this purpose, where country members of GRULAC (Group of Latin America and the Caribbean) had the opportunity to discuss topics relevant for the region within the negotiations. For 2010, IICA will continue its labor, aiming for better organization of the region for COP/MOP5.

INTERNATIONAL CENTRE FOR GENETIC ENGINEERING AND BIOTECHNOLOGY (ICGEB)	[7 MARCH 2009] [SUBMISSION: ENGLISH]

**A New ICGEB Initiative: Assisting the Development of Effective Safety and Regulatory
Systems for the Products of Modern Biotechnology in Sub-Saharan Africa**

By Decio Ripandelli

10. ICGEB has recently started the implementation of a new project, funded by the Bill and Melinda Gates Foundation, aimed at assisting governments and scientists in Sub-Saharan Africa, to support the implementation of reliable regulatory systems that follow recognized international guidelines to protect consumers and the environment. The project's goals align with recommendations in a recent report by the African Union (AU) and the New Partnership for Africa's Development (NEPAD), which highlight the need for Africa to develop scientific capacity to assess and regulate biotechnology and inform policies.

Introduction

11. The involvement of the International Centre for Genetic Engineering and Biotechnology (ICGEB) in the arena of biosafety capacity-building is long-standing and has resulted in a wealth of experience and know-how in a range of biosafety activities that underpin its endeavours focusing on strengthening human and infrastructural capacity in ICGEB Member States. These include:

(a) Improving the level of awareness, knowledge, and expertise of scientists, government officials and other primary stakeholders through the implementation of short- and long-term training programmes (in the form of workshops and fellowships);

(b) Dissemination of relevant scientific and technical information via our biosafety web pages (<http://www.icgeb.org/biosafety/>) and during the training programmes;

(c) Providing tailored services commissioned by competent authorities in Member States to establish or improve specific national biosafety procedures or frameworks; and

(d) Undertaking actual biosafety research fundamental to the understanding of the possible risks arising from the cultivation of genetically modified plants. A major goal of the Centre's activities is to represent this information in a fair light and to expel previous mis-representations and misgivings on the ground.

12. ICGEB's long experience and nonpartisan approach has certainly be one of the aspects that has convinced the Bill and Melinda Gates Foundation to consider funding this three-year ambitious initiative in Sub-Saharan Africa, which will bring all of the Centre's experience to bear, in the promotion of practical approaches to help resolve key difficulties in expediting the regulatory frameworks of the Countries in the Region.

The Project

13. The prime objective of the initiative is to strengthen the ability of countries in Sub-Saharan Africa to fully integrate into the worldwide effort to assure full and balanced consideration of biosafety issues in pursuing appropriate uses of modern biotechnology. This will be achieved by the establishment and staffing, in the newly launched ICGEB Cape Town Component, of a satellite focal point of biosafety expertise to support local and regional regulatory systems overseeing the use of GMOs, and providing advanced training to scientists and members of National Competent Authorities (NCAs). Together these will improve the generation, communication and use of essential information necessary for GMO risk/safety assessment. Initial consultations will ensure the country-orientated identification of current knowledge gaps and capacity building needs for fully executing regulatory decision-making with regard to GMOs and their derived products in a more efficient, equitable and effective manner. Extension of the project into additional global regions will be considered.

14. As modern biotechnology progresses, and the creation of GMOs already begun in various countries in Sub-Saharan Africa, it is important to develop biosafety considerations, including research and the vast pool of current scientific knowledge, with experts of these regions. Despite the efforts of the UNEP GEF programme, still few Sub-Saharan African countries have fully functional biosafety legal frameworks whilst the remaining countries have only interim biosafety frameworks or none at all. The status of science in these national biosafety regulatory frameworks, the drafting of regulations sufficiently stringent in order to protect against genuine ascertainable risks (as determined by the application of best available science), as well as the ability of decision-makers to discern the appropriateness of data necessary to adequately conduct a risk assessment, all have considerable consequences. For example, superfluous data often confuses decision-making, diverting time and efforts from the more serious of the identified potential risks, thereby slowing down the procedure and increasing associated costs. This ICGEB project foresees a package of three complementary and interconnected objectives, tackling problems inherent in biosafety capacity building on a number of levels and aims at strengthening the role of science during the appropriate risk assessment phase of the decision-making process, especially by:

- (a) providing greater access to current scientific information;
- (b) training in how to make best use of this data; and
- (c) filling locally-identified gaps in information required by the regulatory process but not already addressed by the scientific community.

The Activities

15. Working primarily out of the Cape Town Component, ICGEB is creating a regional focal point on biosafety which will be staffed, by early 2010, with 3 full time biosafety specialists. Two of these specialists are being presently trained in the Biosafety Unit in Trieste to become fully conversant in biosafety issues, particularly those currently impacting sub-Saharan Africa. They will transfer to Cape Town by July 2009 where they will carry out a stakeholder consultation in the region to ensure that the capacity-building activities being implemented within the programme directly meet the locally-identified needs on the ground.

16. These activities are to be focused on assisting stakeholders at several levels. By the completion of the project at the end of 2011, it is expected that approximately 250 scientists and regulators providing essential services to their respective NCAs will have participated in a series of workshops, equipping them with specialised training in key areas of GMO regulation. In addition, a total of ten fellows will have completed and graduated from a Masters degree course specifically designed to develop expertise in the risk assessment of GM plants and crops to be deliberately released into the environment, both experimentally and commercially. Furthermore, financial support will be provided for up to forty experts in the region to facilitate their attendance at important regional and international biosafety conferences, so that not only will they be able to keep abreast of the latest developments in biosafety issues, as well as developing and fostering links with the international scientific community, but also help direct agendas towards issues of primary relevance to Africa.

Where are we now?

17. Although the project was formally initiated in June 2008, concrete activities started only at the end of the year, through the recruitment process of the first two "biosafety specialists" which have started

their training in Trieste in February 2009, and through the participation of 5 African experts into the 10th ISBGMO, in Wellington, New Zealand, in November 2008. The two fellows currently “on board” are heavily involved in desktop studies and planning of project activities, and have had a proactive role in the preparatory phase of a questionnaire aimed at collecting specific information on:

- (a) Current situation of biosafety regulatory systems in every Sub-Saharan Africa country;
- (b) Risk assessment practices in these countries;
- (c) Composition and training needs of each NCA.

18. The questionnaire has been sent at the beginning of March to over 600 contact points, policy-makers, researchers and biosafety and biotechnology stakeholders active within Sub-Saharan Africa and will be the basis upon which the focal point in Cape Town will operate to identify the needs of the interested countries. Meanwhile, ICGEB has signed a MOU with the University of Wales, Aberystwyth (UK) to offer a 1-year academic Masters course on “Risk Assessment of GM Crops” to eligible candidates from the Region, and the relevant call for applications was issued last week (five fellowships in the Academic Year 2009-2010 and another five in 2010-2011).

What’s next?

19. A third biosafety fellow, to operate from the Cape Town Component, should be recruited by the end of 2009 (the relevant call for applications has been posted last week) and, in September 2009, the project's External Advisory Board is due to meet in Cape Town, to be updated on progress of the project and to agree further strategic implementation of project activities. By the end of September, the selected candidates for the MSc course in Aberystwyth should begin their studies, while the first regional workshop (out of nine foreseen) should be organized (several options still available).

20. The ICGEB initiative will work “hand in hand” with another major project funded by the Gates Foundation, and executed by NEPAD to establish an African Network of Biosafety Expertise (ABNE). To that effect, appropriate mechanisms are foreseen to ensure the exchange of information and data, the complementarity of individual web-sites contents and linkage, the regional complementarities (if and when necessary), and other instrumental synergies that will increase the reach of each individual project. On the other hand, the efficacy of the project will be evaluated annually to ensure that the overall programme is responsive to evolving situations in the target region. Should results prove promising, it is expected that similar initiatives could be replicated in Southern Asia and beyond: in order to formally initiate this process, a special workshop will be organized in Southern Asia, with invited personnel involved in national biosafety frameworks in the Region (Bangladesh, India, Pakistan and Sri Lanka), by the start of the third year of the programme. These key representatives of the national competent authorities and scientists taking part in the GMOs development and/or decision process will be targeted for intensive discussions in order to gather data, identify common gaps in biosafety knowledge and expertise, and to formulate a plan for a new proposal for essential biosafety capacity building efforts in Southern Asia.

The Program for Biosafety Systems (PBS)

John Komen, PBS assistant director

URL: <http://www.ifpri.org/pbs/pbs.asp>

The Program for Biosafety Systems (PBS) contributes to the implementation of the Cartagena Protocol by supporting partner countries as they develop the policy and legal framework, administrative procedures, technically qualified personnel and outreach mechanisms vital to their national biosafety systems. PBS work emphasizes sound science-based decision making and research, while also addressing socioeconomic considerations. PBS works with partner countries in Africa (Nigeria, Kenya, Uganda, Malawi, Mozambique) and Asia (the Philippines, Indonesia, Vietnam) to develop and implement a program of activities tailored to biosafety needs identified by local collaborators. In addition, PBS works with regional policy-making bodies such as COMESA¹ on subjects of common interest, such as LMO commodity trade and the development of regional technical guidelines.

Project activities

The scope of PBS activities includes the following:

(a) *Policy and regulatory development*: The PBS policy component analyzes the implications of different country and regional regulatory approaches for genetically modified organisms. Choices regarding biosafety policies and objectives are evaluated for their implications for agricultural growth, trade, and food security. Legal expert advice is provided to countries drafting legal instruments and implementing regulations.

(b) *Grants for scientific research on environmental risk issues*: The focus of the Biotechnology-Biodiversity Interface (BBI) grant program, managed by PBS, is on the need to better understand the interaction between genetically engineered crops, agriculture, and the environment. Through BBI, 11 competitive grants aimed at addressing the effects of agricultural biotechnology, particularly genetically engineered crops, on natural biodiversity as it occurs in developing countries.

(c) *Assistance with regulatory documentation for proposed field testing*: This component of PBS provides public sector R&D institutions with the support they need to incorporate biosafety considerations into their product development efforts and to comply with regulatory requirements. It also aims to help regulatory agencies to effectively carry out their roles in the review, approval, and inspection processes.

(d) *Technical training in environmental and food risk assessment*: PBS maintains an active program of training and outreach activities. The overall aim of such activities is to ensure that the people involved in biosafety decision-making are competent and confident to assess planned releases of GMOs and GM food products using the best available science.

Main achievements

Examples of PBS achievements include:

(a) *Contributing to (regional) policy making*: A number of African governments are in the process of drafting, or revising overall guiding policies on biotechnology and biosafety, usually backed by laws or decrees stipulating the specific procedures for GM applications and products. PBS supports national policy

¹: COMESA: Common Market for East and Southern Africa

development where needed, notably in countries who are in the process of defining their national biosafety systems, e.g., in Malawi and Uganda. In Malawi, PBS supported a process of grassroots consultations in key agricultural zones, providing inputs into a draft policy on biotechnology and biosafety developed by a multi-stakeholder Biotechnology Policy Taskforce. The final policy document was submitted to Cabinet in early 2007 and eventually adopted by the Government of Malawi in April 2008. In the meantime, work started to revise the Biosafety Act (2002) to better define regulatory roles and responsibilities among relevant government agencies. The Government of Malawi gazetted the revised Law in August 2007, enabling the formal appointment of a National Biosafety Regulatory Committee and adoption of detailed implementing regulations.

(b) Policy consultations at the national, regional and international level are informed by IFPRI-led PBS policy analysis and publications on local issues (e.g., socio-economic assessments) and emerging global issues (e.g., labeling, liability and redress) related to biosafety implementation. This growing body of literature is available through policy briefs and discussion papers posted on the PBS website: <http://programs.ifpri.org/pbs/pbspubs.asp>

(c) Regional policy research projects in collaboration with ECAPAPA², ACTS³ and FANRPAN⁴ aim to inform the policy process in sub-Saharan Africa. For example, the Regional Approach to Biotechnology and Biosafety Policy in Eastern and Southern Africa (RABESA) initiative, supported by the COMESA Secretariat, in its first phase analyzed the likely trade implications of planting GM crops for selected countries in East and Southern Africa. Based on the outcomes of the study (available at: <http://www.acts.or.ke/pubs/monographs/index.html>), the COMESA Secretariat drafted a set of guiding principles on regional trade flows of GM commodities, which were elaborated by a team of regional experts in a follow-up phase of the initiative. In 2009, COMESA member countries reviewed draft regional guidelines and policies regarding GMO releases and trade, which are planned to be finalized in 2010.

(d) *National biosafety framework implementation*: Detailed legal analysis and review is being done on (drafts of) laws and regulations, and recommendations made to ensure such documents establish workable, understandable and transparent regulatory systems that are consistent with international obligations. In recent years, support was provided to the government of Kenya's review of a proposed Biosafety Bill, initially developed with UNEP-GEF support, which was signed into law in early 2009. Similar support is provided to Uganda, where a biosafety bill will be tabled for parliamentary review in 2010. In Nigeria, PBS co-organized a public hearing in December 2009 regarding the proposed biosafety bill.

(e) *Establishing the BBI competitive grants program*: Scientific data are essential for assessing environmental risks and benefits of GMOs, particularly in centers of diversity. Impacts will differ from one ecological region to another and should be evaluated on a case-by-case basis, in and by developing countries. The focus of the Biotechnology-Biodiversity Interface (BBI) grants mechanism, managed by PBS since 2003, is on the need to better understand the interaction among GM crops and animals, agriculture, and biodiversity. To date, 11 project proposals (see for details: <http://www.ifpri.org/pbs/pdf/bbiprojects.pdf>) have been awarded, with scientific leadership by developing-country research institutes. PBS in-country team leaders and advisory groups were instrumental in

2: ECAPAPA: Eastern and Central Africa Programme for Agricultural Policy Analysis

3: ACTS: African Centre for Technology Studies

4: FANRPAN: Food, Agriculture and Natural Resources Policy Analysis Network

identifying BBI priorities, launching calls for proposals and supporting potential grantees. Findings from the BBI projects are being reviewed through regional technical review meetings and international conferences. A growing number of outputs from BBI projects are available as peer-reviewed publications.

(f) *Integrated Confinement System for GM plants*: Confined field trials (CFTs) play a critical role in the evaluation and development of new technologies intended to improve agricultural productivity. General guidelines for assessing and deciding on CFTs have been adopted in most partner countries. However, their implementation must be carefully managed in order to assure that the experimental material remains confined, so that no effect on the environment and human or animal health is allowed. Aware of the need for a comprehensive and encompassing approach —comprising the development of detailed guidelines, tailored training and technical assistance— in the critical area of biosafety for confined field trials, PBS and partners in developing countries have developed an “Integrated Confinement System” applicable to confined field trials as well as contained glasshouse experiments. The system has been developed through collaborative work in East Africa, and has the following elements: (a) CFT Guideline; (b) Containment Manual; (c) Confinement Manual; (d) Regulatory Procedures; (e) Trial Managers handbook; and, (f) Inspectors' handbook. ICS materials are available in English, French and Portuguese.

(g) In partnership with the Uganda National Council for Science and Technology, PBS developed detailed guidelines and standard operating procedures (SOPs) for confined field trials, adopted by the government of Uganda under existing legal authority. This work enabled the Uganda National Biosafety Committee to review and approve field trial applications for GM fungal-resistant banana, virus-resistant cassava, and Bt cotton. Using the ICS handbooks as a starting point, Malawi’s NBRC recently adopted detailed SOPs for planned field trials for Bt cotton.

(h) *An integrated approach to biosafety training and education*: PBS continues to provide targeted training interventions supporting a clearly defined goal, addressing a concrete biosafety challenge. Recent training events focused on, for example, reviewing and managing actual field trial applications; developing national GM food safety regulations in line with international (Codex) standards; developing training curriculum and materials by African universities. A case from the Philippines serves to illustrate this point, and how policy development went hand in hand with technical training. Over the last several years, PBS is collaborating with the Philippines Bureau of Plant Industry (BPI) in providing technical assistance and training to build insect- and weed resistance management policies for GM maize varieties that are commercially available in the country. PBS-supported activities ranged from internship programs in the US and Canada, aimed at drafting guidelines and training materials, to implementing local training programs on insect- and weed resistance management, targeting crop protection officers of the different regions in the Philippines. Knowledge gained in insect-resistance management (IRM) schemes is currently applied in developing IRM guidelines for the planned introduction of insect-resistant eggplant.

REGIONAL AGRICULTURAL AND ENVIRONMENT INITIATIVES NETWORK – AFRICA (RAEIN-AFRICA)	[29 January 2010] [SUBMISSION: ENGLISH]

Biotechnology and Biosafety Capacity building Activities

The Regional Agricultural and Environment Initiatives Network–Africa (RAEIN-Africa) is a Southern African network (NGO) based in Namibia. It facilitates and promotes Science, Technology, Policy and Society interface for sustainable livelihoods using innovation systems approaches. Its main focus areas are

sustainable management of the environment and agricultural production systems. The network mainly addresses the interface in emerging appropriate technologies maximizing on opportunities available to the resource constrained communities, innovative adaptation and coping mechanisms and interfacing issues within them, alternative energy issues for resource constrained communities and policies that govern access to, safe handling and use of and conservation of natural resources.

The network does this through a multi-stakeholder group of partners who represents public research and development institutions, academic research and development institutions, policy making and regulatory bodies, civil society. The network has **group A** Contact Institutions (nodes) in nine SADC countries (Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe) and five **Group B** countries (Angola, Democratic Republic of Congo, Lesotho, Madagascar, and Mauritius). The network links with National Biosafety Authorities in the respective countries. The grouping of countries into A or B refers to the level activity the network has in partner countries.

RAEIN-Africa is implementing a programme called “Innovation for Sustainable development and Poverty reduction: Towards an enabling Environment for systems of innovation in South Africa” (ISP-TEESA). ISP-TEESA programme supports RAEIN – Africa country partners build capacity in, innovation Systems approaches using biotechnology, biosafety, biofuels and Climate Change (CC) adaptation issues as learning cases. Generation of knowledge is through research (research and development) and outcome of research will lead to packaging of information for the various stakeholder groups and ensuring that the information is communicated through to policy makers. The Network is implementing activities on biotechnology and biosafety issues under Regulatory Innovation: Breaking Biosafety Boundaries in Southern Africa (RIBBB-SA) project.

Past Biotechnology and Biosafety Capacity Building Activities:

1. Twenty seven (27) RAEIN-Africa Partners were trained in negotiation skills. As SADC delegates to the third meeting of the conference of Parties to the Convention on Biological Diversity serving as the meeting of the Parties to the Cartagena protocol on Biosafety (COP-MOP/3) South Africa 27th February to 2nd March 2006
2. Thirty five (35) RAEIN-Africa Partners were trained in **Genetically Modified Organism (GMO) Testing** (One week) from nine countries (Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Tanzania, Zambia and Zimbabwe), Harare, Zimbabwe from September 5-8, 2006.
3. Forty Six (46) RAEIN-Africa Partners attended the Workshop on “**Public Awareness and Participation in Biosafety and the Environment for Civil and Media Organizations**” from nine countries (Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Tanzania, Zambia and Zimbabwe) in Gaborone, Botswana from 21 – 26 May 2006,
4. Thirty one (31) RAEIN-Africa Partners were trained at the “**Biodiversity, Biotechnology, Biosafety and Law Workshop**” from nine countries (Botswana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe) in Mbabane, Swaziland from 30 October – 3 November 2006
5. Twenty one (21) RAEIN-Africa Partners attended the “**SADC Biosafety Committees Workshop**” from 10 countries (Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe) in Pretoria, South Africa from **22-27 October 2006**

6. Country Studies on “**Unpacking Socio-economic biosafety considerations**” in nine **Countries** (Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe) were initiated in 2009.
7. Workshop on ‘**GMO Detection: Current Capacities, Needs & Gaps in Southern Africa**’, Harare , Zimbabwe from 24 to 26 November 2009
Thirty (30) participants from 17 endorsed laboratories from the following countries; Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe attended the workshop and presented current status of their laboratories.
8. Launch of the **Southern Africa Network for GM Detection laboratories** (SANGL), Harare, Zimbabwe from 25th November 2009. The Zimbabwe Science and Technology Minister, Professor Henry Dzinotiwei launched the Network.
17 endorsed laboratories from the following countries; Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe are participating in the Net work. The SANGL will focus on technical capacity building in GMO detection and information sharing between laboratories.
9. **Innovation Systems competency Enhancement and Development (ISCAD) course** for case studying biotechnology and biosafety. October -November 2009 – The course was delivered to over 140 participants from eight countries (2009)

UPCOMING ACTIVITIES

Biosafety Socio-economic Risk Assessment Training workshop 15th to 18th February 2010, Pretoria, South Africa

- 1 Case study in two countries: **Multi-disciplinary investigation of Socio-economic, regulatory and environmental considerations in the adoption of GMOs by small holder Farmers** 2010
- 2 A Regional Experience Sharing Workshop on **Biosafety socio-economic Consideration and Public Awareness and Participation** (Aug 2010)
Partners will discuss, analyse/model tool for implementing socio-economic consideration provision of the CPB.
- 3 A Regional Experience Sharing Workshop on **Public Awareness creation and Participation** (August 2010).Partners will discuss, analyse/model tool for implementing public awareness creation and participation provision of the CPB.
- 4 Training workshop on **Biosafety Risk Assessment and Management**, - in collaboration with the African Union (AU). September, 2010. Target group Biosafety risk assessors from partner Countries
- 5 A **Negotiation Skills training for SADC Delegates to the COP-MOP5**, September 2010, in collaboration with SADC and AU. Focus of training will be on negotiation skills and awareness creation on issues on the agenda for COP-MOP5
- 6 **GMO testing training workshop for members of the SANGL** (September 2010) –
- 7 RAEIN-Africa Public Awareness Project (RAPAP) in three (3) countries piloting a model on Biosafety in decision making processes.

LESSONS LEARNED:

- 1 Public awareness and Participation is very important in implementation of NBFs and requires a continuous process.

- 2 A number of Public awareness workshops conducted concentrated on only awareness creation without strategies for ensuring public participation in biosafety decision making processes.
- 3 A number of Public awareness has been done in urban areas excluding marginalised communities in rural areas.
- 4 Information on Biotechnology and Biosafety has not been packaged to suit different target groups (more for technical and policy, excluding the general public).
- 5 The impact of negotiation skill training workshop was very positive as the trained SADC delegates were very active in the deliberations at COP/MOP3.
- 6 It has been recognised that GMO testing laboratories and capacity assists in implementation of regulations of the NBFs
- 7 Most of the SADC countries have in cooperated socio-economic considerations in their Biosafety regulations.
- 8 There is a gap in understanding the socio-economic issues to be considered in biosafety risk assessment.

RECOMMENDATIONS FOR ENHANCING BIOSAFETYCAPACITY-BUILDING:

- 1 Mobilise resources for countries to effectively build capacity and implementation of NBF
- 2 Need to improve Regional Networking on Biosafety issues
- 3 Need to develop a model of effective public awareness which will lead into participation in decision making
- 4 There is need for appropriate packing of information for different target groups
- 5 There is need for continuous support for capacity building in negotiation skills
- 6 There is need for technical and infrastructure capacity building in GMO detection
- 7 Need for biosafety socio-economic risk assessment tool.
