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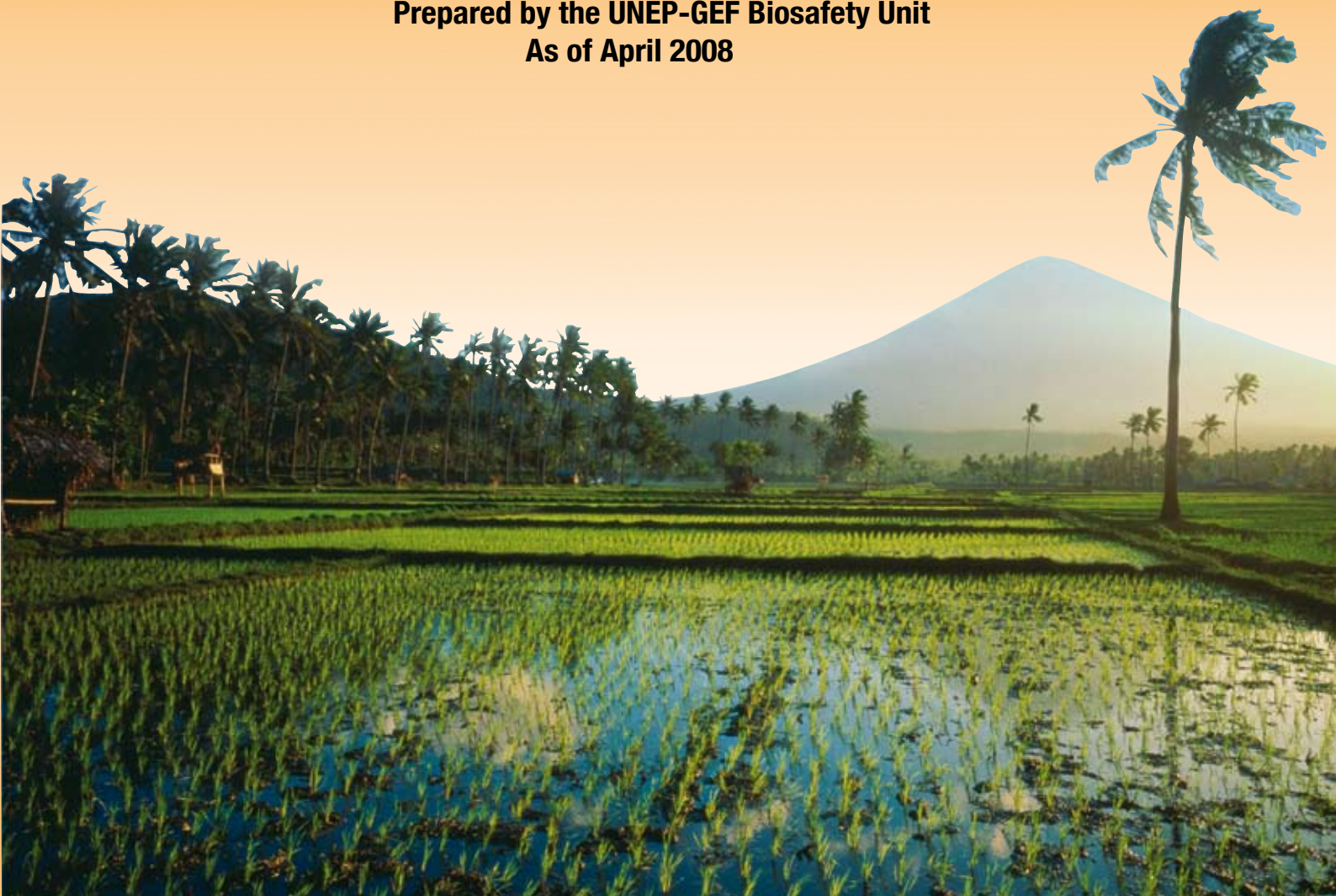


Global Environment
Facility



The Global UNEP-GEF BCH Capacity Building Project Learning from Experience

Prepared by the UNEP-GEF Biosafety Unit
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Learning from Experience

The Global UNEP-GEF BCH Capacity
Building Project



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Foreword

The Cartagena Protocol on Biosafety of the Convention on Biological Diversity has played a critical role in advancing the safe transfer, handling and use of living modified organisms that come from modern biotechnology. However, the ultimate success of this international agreement depends on the capacity of the Parties to fully implement this landmark agreement. The Cartagena Protocol on Biosafety (CPB), adopted in 2000, entered into force on September 11 2003. Since then, a total of 147 countries have either ratified or acceded to the CPB. The speed of its ratification bears testimony to the importance countries attach to this legal instrument.

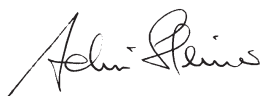
The Global Environment Facility (GEF), as the financial mechanism to both the Convention on Biological Diversity and its Cartagena Protocol on Biosafety, has played an important role in building the necessary capacity in biosafety since the adoption of the Protocol. The GEF, together with UNEP, UNDP and the World Bank, assists countries in developing and implementing national biosafety frameworks (NBFs), and participating in the Biosafety Clearing House (BCH).

The UNEP-GEF project for Capacity Building for Effective Participation in the Biosafety Clearing-House has been enabling countries to successfully meet their obligations as Parties to the Protocol by building capacity and helping to set-up national systems for BCH participation since 2004.

Lessons from Experience: The Global UNEP-GEF BCH Capacity Building Project captures lessons from this project which has helped 123 countries effectively participate in the Biosafety Clearing House through a network of trained regional advisors and a peer-reviewed modular training package.

This document captures early lessons from the implementation of the BCH project. One of these has been the value of establishing a Regional Advisors system, since this has led to better acceptance of advice from experts by Encouraging language and cultural compatibility, similar work ethics and work styles. Another lesson has been the importance of developing peer-reviewed training tools that can be combined in multiple ways, depending upon the workshop objective and participants, in order to create dynamic and targeted training possibilities.

Three biosafety publications are being launched at the fourth Conference of the Parties serving as the Meeting of the Parties in Bonn, Germany in May 2008. We hope that countries will find these lessons useful as they build their capacity to implement the Cartagena Protocol on Biosafety for the better protection of biological diversity now and into the future.



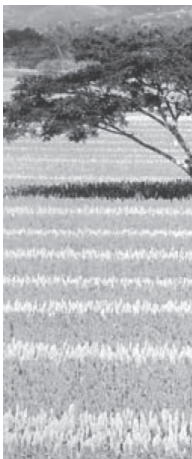
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The Global UNEP-GEF BCH Capacity Building Project: Learning from Experience

A four-year project to build capacity in developing and transition countries to participate effectively in the Biosafety Clearing-House (BCH) has resulted in a well-trained and effective team of BCH Regional Advisors (RAs), an extensive and continually improving body of training materials, and a growing number of participating countries. Throughout the project, the training and the materials have incorporated lessons learned along the way, thus improving both the process and the product.

Background

When the Cartagena Protocol on Biosafety entered into force in September 2003, Article 20 of the Protocol established the Biosafety Clearing-House as a repository of up-to-date information on living modified organisms and their transboundary movement. The BCH is an Internet-based tool that allows anyone to search domestic and international biosafety information.

Because Parties to the Protocol are required to participate in the Clearing-House, and to enter and manage their own data, it is essential that they have the capacity – including the equipment, tools, and know-how – to do so. Entitled *Building Capacity for Effective Participation in the Biosafety Clearing-House (BCH) of the Cartagena Protocol*, the BCH Capacity Building Project was created to help countries fulfil their obligations to the Cartagena Protocol with respect to the BCH, as well as take advantage of its benefits, by providing advice, training, and equipment. The objective is to ensure that countries, civil society private sector and other stakeholders have the capacity to access, utilize, and manage the scientific, technical, environmental, and legal information available through the Biosafety Clearing-House – in other words, that countries have the capacity to participate in the BCH.

In the four years since the BCH Capacity Building Project was initiated, it has developed an extensive body of training materials, trained a core group of Regional Advisors, conducted workshops (at global, regional, and sub-regional levels), and drawn on a wide body of experience. From the outset, the Project was designed to build on prior biosafety work and to incorporate improvements and lessons learned along the way. At each step, the BCH Project has benefited from the participation and input of regional and technical experts. The design of both the materials and the process has been iterative; improvements have been made continually based on both country experiences and expert review. The Project has also yielded lessons that can be applied in future capacity building projects.

Project Start-Up

The BCH Project was initially approved for 50 countries, but was soon expanded to be available to all developing and transition countries that either are, or demonstrate clear commitment to becoming, Parties to the Cartagena Protocol. As of January 2008, 139 countries were eligible to participate, of which 123 had expressed interest. Nearly 110 had already taken initial steps.



From the start, the BCH Project has had the active involvement of key partners. It built on two ongoing UNEP-GEF biosafety activities: the Development Project, which assists some 120 countries in developing National Biosafety Frameworks, and the Implementation Projects, which support nineteen demonstration countries in implementing their Frameworks. These projects identified that many countries need to develop technical and financial capacity in order to meet their obligations under the Protocol. The BCH Project was developed in response to this need in close collaboration with the Secretariat of the Convention on Biological Diversity (SCBD) and has received key support from a number of donor governments (Box 1).

The initial concept was to train three individuals from each participating country in a series of regional workshops. But at a meeting of experts—consisting of training experts, key individuals who had been involved in establishing their countries' national biosafety clearing-houses, and participants in the negotiations to establish the international BCH—held early in the project (May 2004), it was decided to take a different approach. Recognizing that a week of basic training would be insufficient to create the level of national expertise needed to address the range of biosafety issues that each country could face relating to its obligations to the BCH, it was decided to focus instead on developing a core group of intensively and extensively trained regional advisors who would then deliver training, advice, and assistance to countries during the life of the project and afterwards. This early shift in project design proved to be a key element in creating an effective, dynamic, and sustainable training system.

Lessons

Broad-based advice from a wide range of training and biosafety experts early in the project was significant in developing a training methodology that ensured both immediate effectiveness and longer-term sustainability.

Building on the synergies with existing projects, and drawing on the experience and contacts gained through those projects, helped the BCH Project to save valuable time and manage quick start-ups at the country level.

A System of Regional Advisors

Once the training methodology was determined, the BCH Project team moved quickly to recruit individuals to be trained as Regional Advisors. Advertising in international, regional, and sub-regional publications and websites, the team looked for individuals with expertise in either of two areas—information technology and the Cartagena Protocol—who would be invited to attend a training workshop. Out of some 400 applicants from all over the world, 30 individuals were invited to attend a two-week “training of trainers” workshop. Upon completion of the training, twenty-four attendees were offered retainer contracts to become “Regional Advisors” who can assist countries in their regions in determining the nature and level of their participation in the BCH and then operationalizing it. Additional workshops were held subsequently, and as of January 2008, forty-seven advisors working in their respective regions—Africa, Asia,

With little more than a week's notice, two Regional Advisors, one from India, the other from the Philippines, worked closely together to organize a successful training workshop in Cambodia. A knowledgeable CPB Advisor with excellent facilitation skills collaborated with the IT Advisor experienced in assisting countries develop three different BCH participation options. They planned the agenda prior to arrival in country and conducted a well-run, effective workshop.



Caribbean, Central and Eastern Europe, Latin America, and the Pacific Islands—had been trained and taken on board. Each is either an IT specialist or a CPB specialist.

The role of the Regional Advisors is to provide direct support to countries in three ways: 1) along with the BCH Project team, assist countries in choosing what kind of participation to have in the BCH; 2) provide training to key national constituencies in how to access and use the BCH; and 3) assist in operationalizing the country's BCH access. Regional Advisors may also help countries negotiate a Memorandum of Understanding (MOU) with UNEP to participate in the BCH Project and serve as ongoing resources. They are, in other words, coaches, trainers, facilitators, consultants.

The Regional Advisory system became fully operational in December 2005. Three years later (as of January 2008), the Advisors had:

- undertaken 232 national visits,
- assisted 82 countries,
- conducted 31 global mission,
- conducted 142 global and national workshops, and
- trained over 1,550 people.

Lessons

Language and cultural compatibility, similar work styles and ethics, and shared social and economic realities make the advice and services provided by Regional Advisors more readily accepted than from a consultant coming in briefly from outside.

The Regional Advisors' ongoing availability and up-to-date training makes them a sustainable and credible source of advice.

Under the BCH guidelines, countries have four options regarding the nature and level of their national participation in the Biosafety Clearing-House:

- **Option 1:** Entering and managing country data via the BCH Central Portal.
- **Option 2:** Sending information to the CBD Secretariat via mail, fax, e-mail, or CD-ROM.
- **Option 3:** Creating and managing a database of required information that interacts with the BCH Central Portal through the Internet and allows the Central Portal to “pull” information from it.
- **Option 4:** Creating and managing a database of required information that interacts with the BCH Central Portal through the Internet to “push” information from the database to the Central Portal.

These different ways of meeting their BCH obligations (and accessing its benefits) vary in terms of the technology and skill required. Helping countries determine which kind of participation to commit to is an important initial function of the BCH Project team, staff, and Regional Advisors, as difficulties can arise if a country chooses an option that is incompatible with either its needs or its capacities. Initially, a number of countries with relatively advanced technological capacities assumed that they should choose the more advanced options (3 or 4). In fact, however, most countries currently have only a small



number of Biosafety-related transactions that need to be entered each year. With the system evolution that inevitably takes place with any software, keeping up to date on these changes for the small number of current entries may not make sense. As experience has accumulated in a number of countries, the BCH Project team and Regional Advisors have become increasingly effective at helping countries choose the option best suited to their current conditions (Box 2).

Lessons

Although Regional Advisors should be neutral on a country's choice of how to participate in the BCH, they must provide clear and straightforward answers about advantages and disadvantages of the various options.

The options are not mutually exclusive. Countries can begin their participation in the BCH at one level and change as their circumstances and capacities change.

Like other aspects of the BCH Project, the Advisory system is fluid, incorporating ideas and information provided by Regional Advisors working in their countries to continually improve the process and the materials. This input is obtained in many ways:

- Regional Advisors already under contract are involved in subsequent training workshops for new advisors. This involvement may take the form of attendance during the second week of the training, which allows established Advisors both to upgrade their skills and to share information and experience. In other cases, established Advisors may be part of the training team, which gives them experience in conducting workshops while also introducing them to the latest available materials. The training workshops not only provide information about how to do training, they also model the experience.
- To promote the sharing of knowledge and experience, the BCH Project team has set up a MOODLE website. MOODLE is an open-source knowledge-sharing platform used to create on-line learning communities. At the BCH MOODLE site, both Regional Advisors and countries can find the latest training materials and participate in forum discussions on a range of issues related to BCH participation and training (Box 3).
- ANUBIS is an online distributed project management system, accessible to all Regional Advisors as well as the project team. Regional Advisors are asked to upload project documents – such as initial Memoranda of Understanding, forms, and mission reports – so that other Advisors as well as countries can learn from one another's experiences.
- In April 2007, the BCH Project team convened a meeting in New Delhi for all Regional Advisors. The objective was to enhance training skills, to share and build upon the experiences of the past year, and to review and update the tools and procedures.

Through these mechanisms, Advisors have access to the latest materials, tools, advice, and lessons learned. This continuing infusion of new experience keeps the process dynamic.



Lesson

In-person and electronic networking among Regional Advisors – through workshop participation, the sharing of stories and mission reports through MOODLE and ANUBIS, and periodic review meetings – is critical to providing effective and improving capacity building services to countries.

Development of Training Materials

While the Regional Advisory system was being put in place, the BCH Project was simultaneously developing a modular, multi-component training package for use by the Regional Advisors and others in preparing countries to participate in the BCH. The package is designed as a series of modules and training tools that can be used in conducting national workshops and working with country officials. The modules and tools can be combined in different ways according to the training needs and interests of the users. Throughout the project, the components were repeatedly reviewed by experts, tested in countries, and revised based on feedback from the Regional Advisors and others.

As of January 2008, the training package consisted of:

- eleven modules on key topics related to biosafety,
- two interactive models that allow trainees to work individually and to test their knowledge and learning,
- twenty-six case studies illustrating how the Biosafety Clearing-House can be used,
- thirteen handy “Ready Reference” guides to provide quick summaries of key topics,
- a set of eight discussion points (with answer key) for trainers to use in workshops to highlight aspects of the BCH,
- a set of twenty-four quiz questions (with answer key) for trainers to use to gauge understanding of key issues,
- an Operational Handbook countries can use to increase their effectiveness as BCH participants, and
- sets of Power Point presentations and guides to various aspects of running a workshop.

The latest versions of all of these materials are available on MOODLE, and can be accessed by both the Regional Advisors and countries. As of March 2008, most of the materials are available in five UN languages (English, French, Spanish, Arabic, Russian). In addition, model curricula have been developed that put the components together in varying combinations for eight different stakeholder groups: 1) those responsible for making national information available through the BCH, 2) government officials that will regularly use the information, 3) civil society representatives who may participate in decision-making processes, 4) industry

Two Regional Advisors work closely together in preparing and carrying out national BCH workshops throughout Southern Africa. The CPB Advisor, experienced in interpreting and applying the Cartagena Protocol in her own country, is collaborating with the younger IT Advisor. Together, they are an efficient and effective team, complementing each other in their respective professional expertise and integrating theoretical and practical aspects of BCH training.



groups needing information for import and export of living modified organisms, 5) scientists, researchers, and others who need to share scientific, technical, and capacity building information, 6) customs officers and enforcement officials who need BCH data relating to border control, 7) media representatives, and 8) members of the public.

The BCH Project has purchased licenses to use NETOP, a computer classroom management program that allows information displayed on one computer to be available to other computers in a classroom or training setting. NETOP has been used in most of the project's national, regional, and global workshops, and is available to Regional Advisors to use on up to 30 computers simultaneously. Despite connectivity and IT problems in some settings, it is proving to be a constructive, helpful, and practical tool for both trainers and those being trained.

As the training materials are developed and refined, they are made available not only at the BCH Project website but also at the Central Portal of the Clearing-House (<http://bch.cbd.int>). The BCH training materials are in two categories, the training materials themselves and manuals on how to use the BCH Central Portal; to ensure that all of the training modules and capacity building experiences developed and accumulated under the auspices of the BCH Project remain available after the project ends, all of the training materials are being added to the BCH Central Portal.

Lessons

The availability of tools that can be combined in multiple ways, depending upon the workshop objective and participants, creates dynamic and targeted training possibilities. The modular package enables countries, Advisors, and others to select the most appropriate units for their purposes, as well as to modify them to suit the agenda, the culture, and the training context.

A greater number and variety of case studies would increase the usefulness and applicability of the training materials by creating more flexibility for how training modules are assembled.

Learning from Experience

In addition to learning broad lessons about the design and structure of the project and its outputs, the BCH Project team has been concerned to draw lessons from the experience of Regional Advisors on the ground. The ongoing input from new training workshops, conversations on MOODLE, and the mission reports and other documents submitted to ANUBIS provide regular input and feedback. But to more fully capture the various regional experiences, the BCH Project team assembled experienced and newly trained Regional Advisors at a week-long meeting in New Delhi in April 2007. The meeting was rich in sharing details of what works and what does not, what needs improvement, and the innovations Regional Advisors have come up with.

The meeting focused both on the kinds of activities Regional Advisors engage in and similarities within and across Regions.



Regional Advisor Activities

Regional Advisors engage in three kinds of activities: coaching, training and facilitation, and consulting.

In coaching the political and managerial decision makers responsible for BCH participation, Regional Advisors have been able to fill a number of needs: helping to develop the Memoranda of Understanding that define the country-BCH relationship, providing knowledge and information on key BCH aspects, providing feedback on performance, and aiding in the development of BCH activities, among others. Although Regional Advisors found that many aspects of these activities went well, more time is needed for both planning and follow-up activities. They also identified a need for coaching guidelines.

Lessons

To be most effective, a coach needs excellent inter-personal skills, a common language with the client, and subject matter expertise, as well as access to wider resources.

Seeming problems can turn out to be strengths. The lack of a single person as the national contact for negotiating and carrying out BCH activities at the country level means that at the end of the BCH Project there will be a broader set of individuals trained in BCH activities and invested in their country's successful participation in the Biosafety Clearing-House.

Training and facilitation is perhaps the major role of Regional Advisors – the one they spend the most time on and the one that reaches the most people. Training needs in a particular country are often identified by consultation with the BCH National Focal Point (the person designated to be responsible for the country's coordination with the SCBD regarding development and implementation of its BCH participation), previous mission reports, networking, and reports from National Biosafety Framework activities. Advance preparation – including planning, coordination, training design, securing appropriate facilities, identifying the participants' backgrounds – were frequently identified as things that went smoothly and contributed to effective training. Among the things Regional Advisors identified as needing improvement are:

- logistical issues – including connectivity, ongoing power supply, functioning NETOP, availability of needed materials;
- uniform translation – local officials must use the authorized official versions of documents, not local translations;
- review of data – determining whether national information is up to date;
- better information on the Cartagena Protocol – needs to be introduced and explained earlier in the training; and
- audience-related issues – is the workshop geared to the audience, are all the necessary people involved, do they understand next steps, and what is the follow up mechanism to ensure that next steps are taken.

Working together, a CPB Regional Advisor (a Tunisian university lecturer) and an IT Regional Advisor (a US-trained engineer from Cote d'Ivoire) collaborate in preparing and implementing workshops throughout West Africa, mostly in French-speaking countries and often under difficult circumstances in terms of IT connectivity and local infrastructures. The pair has become expert at fine-tuning national workshop agendas to each country's specific needs and adapting case studies to the realities on the ground. They thus create long-term working relationships with the countries they advise and contribute in a pro-active manner to sustainable BCH management within West and Central Africa.



Lessons

At the workshop level

Before beginning a workshop, Regional Advisors need sufficient time to understand the country's needs, establish contacts, and adapt and finalize material. A day in-country before the workshop can greatly improve the workshop experience.

Confirming that NETOP, the BCH training website, and other technologies are working is essential before the workshop. But because things can go wrong, Regional Advisors should also bring hard copies of the training materials (including PowerPoint presentations) and the off-line version of the BCH Central Portal.

Daily "workshop navigation meetings," in which participants are asked for feedback on all aspects of the workshop (from logistics to substance), are an important tool both for making course corrections in the current meeting and for planning future workshops.

Short, simple presentations, combined with hands-on experience utilizing the interactive modules and case studies in which participants practice what they are learning, are most effective in developing mastery of the material.

It is best if both a Biosafety Regional Advisor and an IT Regional Advisor are present, but their respective roles and obligations need to be clearly defined.

Flexibility and contingency planning are essential.

At the BCH Project level

Working with countries to ensure that they have the computer, Internet, and other necessary technology (including adequate bandwidth) should remain a project priority.

An increase in the number of interactive sessions, along with continued improvement and increased variety in the case studies, will be useful additions to the training materials.

Attention should be given to ensuring that the BCH Focal Point, who in many countries is appointed for his or her political position and is not operationally involved in implementation of the Cartagena Protocol, also receives BCH training.

Consulting missions can take many forms. They may involve developing MOUs, testing IT applications, clarifying Protocol obligations, budgeting, determining IT compatibility between the providing company and various ministries, working with the BCH Task Force, among others. Regional Advisors engaged in consulting missions generally found that they had good access to country information and good cooperation, including flexibility, from key actors (country officials, UNEP staff, etc.); decisions on the nature and level of country participation in the BCH had already been taken; and parties were ready to achieve results. Nevertheless, Regional Advisors identified clear areas where improvement is needed:

- logistical issues – difficulties in obtaining visa because notice was short, inadequate Internet access; difficulties with car rental;

A Regional Advisor from Tajikistan has formed a close working relationship with an Advisor from Uzbekistan, as is evident in their recent mission to Armenia to conduct a training workshop. They collaborated on pre-workshop preparation, planned the workshop with minimum supervision, and translated many documents into Russian in record time. The workshop received high evaluation marks from participants.



- planning issues – insufficient contact with key people before the mission; too many stakeholders involved for the task; government officials unfamiliar with their roles;
- IT issues – IT specialists not in attendance; lack of clarity about IT role and relationship to other functions.

Lessons

Interpersonal skills, good relationships, and an understanding of country-specific realities produce good results.

Clear terms of reference defining the Regional Advisor's exact role before, during, and post-mission are essential.

Continued address of IT issues is needed to improve outcomes. These issues include inadequate Internet access and IT facilities, inadequate IT collaboration among ministries, and the need for better IT skills among officials with BCH responsibilities.

Regional Variation

The experiences of the various regions highlights that while planning, logistical, and personnel issues are often similar everywhere, there are also regional variations related to culture, language, level of infrastructure, and prior LMO, biosafety, and database experience. Similarly, country experiences vary by size, level of development, and the skill and experience of technical, policy, and managerial personnel. Depending upon the region and the country's level of development, the IT-related issues faced by those responsible for the BCH can stem from lack of Internet connectivity, lack of trained personnel, or loss of skilled personnel to higher-paying industry. The MOODLE forums and the ANUBIS database were established to provide Regional Advisors with the resources to learn from one another.

Lessons

Those who are using MOODLE and ANUBIS testify to the support and feedback they get from colleagues – including in real time on mission and while conducting workshops. Nevertheless, MOODLE and ANUBIS remain underutilized resources that could be used more regularly by Regional Advisors to share experience, get ideas, promote discussion, and make contacts.

The BCH Project team continuously changes MOODLE and ANUBIS to make them more user-friendly. This is done in collaboration with the users in order to reflect growing and changing needs.

Introducing additional tools such as Skype telephone service and text messaging would help in making real-time advice and input available to Regional Advisors working in settings with Internet connectivity issues.



National Participation in the BCH

Once countries understand their options, make a choice about the nature and level of their participation in the BCH, complete a Memorandum of Understanding, and receive training in how to participate responsibly in the BCH, they are ready to begin providing country data and using BCH information for a wide range of queries. For countries that have chosen either Option 1 (direct input through the BCH Central Portal) or Option 2 (non-Internet-based provision of data), beginning national participation in the BCH is relatively straightforward. For countries that have chosen either Option 3 (BCH Central Portal pulls data from country web server) or Option 4 (country web server pushes data to BCH Central Portal), a host of technical issues remain.

From its capacity building activities, the BCH Project identified the need for IT solutions that will help countries create national BCH nodes (or networking data entry points). In response, the SCBD developed and released two new tools:

- HERMES is an online content management system that allows a country to create its own national BCH database that is fully compatible with the BCH Central Portal. It provides content management, content versioning, file management, search functions, support for multiple languages, and security through Internet security authentication. As is the case with so many BCH Project innovations, the HERMES option was created in direct response to a need identified by Regional Advisors (Box 4).
- The *BCH Ajax Plug-In* is a client-side application that can be integrated with any existing website to provide BCH information through out-of-the-box interoperability. It does not require any specific IT knowledge or software installation.

These new tools significantly enhance countries' ability to participate in the BCH, and the BCH Project has developed modular training manuals for learning how to operate them. Early versions of these manuals have been available on MOODLE since mid-2007. Active discussion forums in which experiences with these tools are shared, suggestions are made, and problems are identified are helping to improve the manuals. Like other BCH Project products, the HERMES and Ajax Plug-In manuals will benefit from ongoing feedback, use, and revision (as will the tools themselves).

Lessons for Future Projects

The use of Regional Advisors to build BCH capacity was a decision made early in the project. Rather than training individuals in each participating country, which would inevitably mean shorter, more perfunctory training in order to reach the nearly 120 countries that ultimately got involved in the project, it was decided to train a group of Regional Advisors who would in turn train key individuals in each country.

This "training of trainers" approach has built a skilled group of Advisors who bring depth and experience to the task. Unfortunately, their level of skill and training also makes them attractive recruits for other work, and attrition is a concern. Of sixty trained Advisors, only forty-seven remained actively involved in the Project as of January 2008. But even if they are lost to the BCH Project, they are part of a growing group of knowledgeable BCH professionals in their countries and regions.

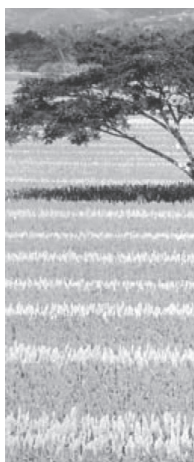
In general, the BCH Project tries to pair the two kinds of Regional Advisors – IT and CPB specialists – to organize national workshops. As they have gained experience, a number of such pairs have become innovative specialists in their own right, developing new approaches to training, including creating game-show style learning games and role plays.



Lessons

A system of trained Regional Advisors who have project support and back-up contributes to long-term sustainability and in-country capacity. By building training skills among regional biosafety and IT experts, the project reaches more people than it could by training a few individuals within countries.

The multi-pronged approach of training Regional Advisors, providing continually improved training materials and tools based on feedback, and promoting collaboration and exchange of experience within and across regions, helps to ensure that not only biosafety and IT expertise but also training expertise remain after the project ends.



Box 1: Collaboration with Partners

The BCH Project has been developed in collaboration with a number of partners. The project team works with these partners to ensure that the project builds on work being carried by others and harnesses the lessons and practices of their work.

Secretariat of the Convention on Biological Diversity (SCBD)

The SCBD has reviewed the training modules directly related to the Cartagena Protocol and the BCH Central Portal and helped review the terms of reference for the selection of Regional Advisors. SCBD representatives participated in all of the training workshops. As training materials have been completed, they have replaced the toolkit on the Central Portal. SCBD continues to collaborate with the development of new material and the selection and training of new Advisors. The BCH Project, through the project manager, is represented in the BCH Informal Advisory Committee to the Executive Secretary. In addition, the training material developed by the project is available through the Central Portal of the BCH through an online context-sensitive help section and a training page.

Canada

Environment Canada supported workshops to assist countries in the South Pacific and the Caribbean in setting up regional BCH nodes.

Germany

InWent, the German training agency, collaborated with the BCH Project team in developing the curriculum and pedagogical methodology for the workshops to train the Regional Advisors.

Switzerland

Switzerland is offering countries the opportunity to access its fully developed and operational website and database, either by allowing a country free use of the application developed by the Swiss government, along with one-time training and user manuals, or by hosting a country's website for free and providing training and website updates as needed.

United States

Website templates created by the U.S. Geological Survey's National Biodiversity Information Infrastructure (NBII), based on SCBD templates, make working on the BCH relatively simpler. Along with the U.S. State Department, NBII is donating the time of technical staff for training, workshops, and the development of training manuals.

United Nations Training and Research UNITAR

Along with InWent, UNITAR provided assistance in the development of the training materials, providing advice on adult learning techniques and pedagogical methodology.

Other Stakeholders

Consistent with the commitment to involve a range of stakeholders, the BCH Project has also sought advice and input from nongovernmental organizations and industry groups. Both the Third World Network and the Global Industry Coalition have been consulted on the training materials and have been invited to the workshops.



Box 2: Choosing the Best BCH Option

Countries often alter the nature and level of their participation in the Biosafety Clearing-House as they learn about the various options available.

- **Peru**, which already had a national roster of biosafety experts and other basic information, initially assumed it would pursue option 3 or 4. After several months, it became clear, however, that its existing database was not suitable for the BCH Central Portal. Although Peru has the necessary software development skills, it decided instead to pursue option 1. Later, when the HERMES content management system became available, Peru chose to use it to create its national BCH website—a more comprehensive and sustainable solution.
- Although **Costa Rica** started its negotiation with BCH Project assuming it would pursue option 4, by the time the Memorandum of Understanding was finalized, it had decided on option 1. Since then, it, too, has used HERMES to create its own national BCH website.
- **Ecuador** had already completed its MOU, had selected option 3, and Regional Advisors were working with the country to implement that choice, when it made the change to option 1. Ecuador also later used HERMES to create a national BCH website.
- **Brazil**, whose Ministry of Science is required by law to build and maintain the national BCH software, chose in its MOU to use option 4. Although the Ministry has an important software development unit that manages huge portals (more than 5,000 web pages, 120 editors, 5 million hits per month), it switched to option 1 to register information in the BCH. It became the first country to use the new SCBD-provided Ajax Plug-In to integrate national information into the BCH portal. Its experience has been very helpful to other countries making the same decision.
- Attendees at the **Bangladesh** training workshop soon realized the high costs of sustaining the long-term IT assistance needed to support its choice for option 4. When the Hermes and Ajax Plug-In tools were introduced, those responsible for choosing Bangladesh's level of BCH participation chose option 1 instead.
- When the technical problems related to maintaining the local IT infrastructure became apparent, the **Democratic Republic of Congo** switched from option 3 to option 1, thereby ensuring that at least that level of participation in the BCH could be maintained.
- **Ethiopia**, on the other hand, switched from option 3 to option 1 not because of a lack of on-site technical skills, but to ensure the sustainability of its national BCH activities beyond the life of the BCH Project.



Box 3: Sharing Experience and Lessons Learned: MOODLE and ANUBIS

Sharing experiences and lessons learned is one of the major pillars of the BCH Project, and a number of tools have been specifically provided to facilitate exchanges among Regional Advisors and with BCH project staff. Coming together at training sessions is an important way to exchange information and build contacts with peers. But to ensure that exchanges are not only periodic but ongoing, and that the project captures and incorporates lessons as they are learned, the BCH Project has put in place two key interactive tools.

MOODLE (<https://moodle.unep.ch>) is a dynamic website that contains not only training materials, tools, and model curricula (also available at the BCH Central Portal) but also forums for the exchange of ideas. The private site is password protected, and is managed and moderated by the Regional Advisors. Forums cover a range of topics (with some oriented toward participating countries sharing their experiences on how best to participate in the BCH, and some focused on Regional Advisors sharing tips on their capacity building work). As Regional Advisors have gotten used to both posting their own experience and using it as a research tool, it has become a primary resource, reducing planning time for workshops, eliminating the need for long planning teleconferences, and improving the content and materials used as Advisors choose from the best ideas available.

In a particularly innovative use, MOODLE became the mechanism through which the BCH Project training materials were translated into Spanish. As translators submitted their documents, Regional Advisors could download them, review them, and submit comments. This process produced the final, broadly accepted, and properly reviewed translated versions of dozens of documents in a timely manner.

ANUBIS (<https://anubis.unep.ch>), introduced in April 2007, serves as an online repository of documents relating to the BCH Project, including initial Memoranda of Understanding, forms, mission reports, and subsequent evaluations. In addition to providing a convenient record of what went on in any given country and a source of ideas and lessons for others working in similar countries, ANUBIS will become a comprehensive source of experience and lessons learned that can be tapped in the future.

Box 4: HERMES: A Need in One Place Becomes a Tool for All

At training sessions in the Pacific Region in 2004 and 2005, participating countries identified that they need an Internet presence to share their biosafety information within the region, and determined that they would build a regional BCH node and several national BCH websites. At the same time, they realized that no IT infrastructure was ready in the region to host securely and permanently a simple content management system (CMS) where information could be updated easily even by non-computer-savvy personnel. The BCH Project team and Regional Advisors relayed those countries' concerns to the SCBD, which then decided to build its own content management system called HERMES, hosted and maintained on its servers in Montreal. HERMES provides the building blocks for creating national BCH websites. Today, seven countries in the Pacific region have a presence on the web and have been or are currently being trained in the HERMES application, a regional Pacific BCH node regrouping those countries' information is under construction and will be launched soon, and the HERMES tool is available to—and being used by—countries all over the world.



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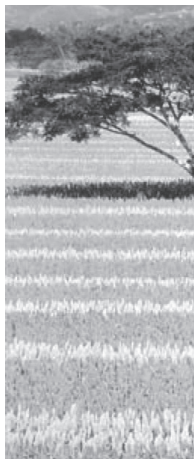
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