**Asia-Pacific Economic Cooperation**

# Public Perception of Agricultural Biotechnology:

# A Best Practices Guide

**Asia-Pacific Economic Cooperation (APEC)**

**High Level Policy Dialogue on Agricultural Biotechnology (HLPDAB)**

**October 2007**

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**Workshop on Public Perception of Agricultural Biotechnology**
**Lima, Peru**
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# Introduction

As the majority of APEC economies enter the second decade of large-scale commercialization and consumption of transgenic crops, renewed commitment is required to assist the Asia-Pacific region's policy makers in promoting the responsible use and informed adoption of agricultural biotechnology throughout the region.

Six of the 22 places in the world where transgenic crops are grown to date are APEC economies. These six economies account for more than 60 million hectares of the 90 million planted with transgenic seed worldwide in 2005. In addition, all 21 APEC economies are actively engaged in some form of agricultural biotechnology research and development. In 2006, 10.3 million farmers worldwide planted biotech crops. Some 90 per cent were small farmers from developing countries

However, significant challenges for agricultural biotechnology remain to be confronted. These challenges can be effectively addressed in the coming years through the efforts of the Policy Dialogue. At the 2006 Policy Dialogue in Ha Noi, Viet Nam, Policy Dialogue participants identified several issues – among them public perception and understanding of agricultural biotechnology – as barriers to its wider acceptance and responsible use. The workshop is aimed at addressing the public perception challenge.

Peru, the host country of the 2008 APEC Senior Officials meeting, is home to a significant part of the world's biodiversity. In Peru, the informed public at large believes the most visible potential risk of modern agricultural biotechnology is the "perceived" "danger" that it may "damage" its megabiodiversity. The same view is likely held in Costa Rica and Mexico.

 In addition, Peru's public and political perception is focused on the possible consequences of incorporating biotechnology in agricultural activities for which Peru is considered a "center of origin." This brings into consideration social and cultural factors (e.g. significance of certain crops to indigenous peoples) which play a critical role among government and the public in many APEC member economies. Therefore, these are sensitive areas that should be taken into strong consideration when attempting to communicate effectively in APEC member economies facing similar circumstances.

Given the mix of developed and developing country economies within APEC, other factors need to be considered in the context of efforts to effect public perception. These include, but are not limited to:

- the nature of markets for products of agricultural biotechnology (domestic vs. export)
- predominant styles of agricultural production (subsistence vs. large-scale)
- existing infrastructure for the diffusion of innovation (not unique to agriculture or biotechnology)

This "best practices" guide (based on the October 4-5 2007 workshop in Lima, Peru) is aimed at communications professionals, policy makers and any other officials within APEC member economies, who are in a position to analyze, make recommendations and/or take action to affect public perception of agricultural biotechnology.

The guide is intended to provide information on ways to study public perception; relevant factors affecting public perception, including the link between public perception of agricultural biotechnology and public perception of agriculture and government policies in general; and various methods for addressing public perception with respect to agricultural biotechnology.  It draws from and builds upon the 2002 document, *Communicating about Agricultural Biotechnology in APEC Economies: A Best Practice Guide*

# 1) Framing and Key Principles

# Strategy Design

## *Introduction*

Communications are an integral and critical step in the process of building public support for innovative technologies. Such technologies, such as genetic modification of plants, do not possess economic value if they are rejected by the majority of the public. Past communication activities were often perceived as "one-way" by which scientists and developers tell "their truth" in simple educational approaches. This has sometimes proved not to be appropriate and unsuccessful at informing and persuading the general public on the merits of innovative technologies.

Several factors need to be taken in consideration when applying new communications strategies, including:

### Increased engagement of industry and governmental organizations on issues regarding GM food and feed

Increased trust should be one key objective for communication by governmental and industrial communication partners, and this is best improved by engaging with target audiences in ways that genuinely enable them to voice their concerns or issues. Similarly, sometimes industry and government need to engage with each other more closely. Increased engagement and increased trust allows for smoother and more effective communication.

### Focus on the benefits, rather than defending "acceptable" risks

Key to public acceptance is to take public concerns seriously, but at the same time communicating the benefits of the new technologies for consumers themselves. It is therefore important to foster a "consumer benefits communication strategy", rather than a "classical" risk communication approach.

### Better definition of the target audience for a more target-oriented communication approach

The general "public" is a complex entity of sub-populations, with each of them responding to different formats and styles of communication, and with varying access to information. Therefore, part of the communication strategy is to capitalize on the knowledge of the audiences' preferences and to use "tailored" communication tools.

Scientists and biotechnology developers have often assumed the public would embrace the new technology as "obviously positive" and dismissed public concerns as irrelevant or unfounded. It is important, however, to seriously consider public needs and address their concerns. It is important that industry and governmental bodies proactively seek trust and confidence from the public. Agricultural biotechnology offers a number of potential benefits, including better sustainability of modern food production. Be aware, however, that the uses and potential benefits vary with the needs and characteristics of each member economy. Producers in one economy may favour applications that increase yield for export markets

while another economy's producers may require applications that protect a domestic crop from being wiped out by a virus or other disease.

New GM plant traits and sustainable technologies might increase the efficiency of agriculture, for example, with a decreased use of herbicides, thereby lowering $CO_2$ emissions. Think also in terms of what opportunities might be lost by a decision **not** to adopt applications of agricultural biotechnology (e.g. health benefits of nutritionally-enhanced crops, loss of scientific and technical expertise due to "brain drain" of professionals, continued use of pesticides etc.). However benefits are best appreciated by an audience when risks are acknowledged,

## *A step by step approach*

Developing an effective communications strategy is best achieved through a structured, stepwise approach that maps out the following:

*1. Know your organization and its objectives*
What are the goals, objectives, policies, practices, products, services, actions, communications patterns, etc. of the organization?  What are the organization's key problems?  Strengths?  Weaknesses?

*2. Identify and describe "publics"*
Who are the important "publics?"  Where are they?  What are their average ages, occupations, incomes, education levels? How do they obtain their information about biotechnology (word of mouth/peer groups? Media? Industry? Other means? Who do they trust?)

*3. Assess the relative importance of each public*
Which public(s) have the greatest impact on the organization or on other publics?  In what way have they acted before?  What are their strengths and weaknesses?  What are their likely courses of action?  Who are their opinion leaders?

*4. Assess your organization's reputation with each public*
How do important publics perceive the organization?  What is your image?  What do they like or dislike about it?  What specifically do they know about the organization?  What are their attitudes?  Why do they feel the way they do?

Conduct environmental analysis (public opinion research (see Section 2) through:
- Focus groups
- Surveys
- Media monitoring & analysis
- Stakeholder analysis
- Correspondence/e-mails/petitions
- Other research programs

*5. Determine the action or communication required*
What actions or communications would best reach the target audience with the organization's key messages?

*6. Plan objectives*
What are realistic objectives?  What are the chances of success?  Describe what you are hoping to achieve in clear objectives that can be measured if they were successful.

- Be as specific as possible
- Limit the number of objectives to a manageable number
- Set short-term and long-term goals

*7. Determine strategy and tactics*
What strategy will work best? What activities should be used in the strategy? What combination of communications techniques will work best?

Often, when confronted by the wide variety of communications tools and techniques at our disposal (e.g. the Internet, public meetings, etc.), there is the temptation to begin with the admittedly more exciting part of the communication process. Do not fall into this trap: the extra effort required to design a solid communications strategy before deciding on techniques and activities, will pay off in a more effective outcome.

Your plan may use a variety of tools:

- Marketing materials
- Advertising campaigns
- Public service announcements
- Web site information and other "new" media
- Educational programs
- Newsletters
- Speeches/presentations at public meetings
- Information kits
- Use of the media

A model communications strategy can be found in Annex X.

*8. Execute the program*

Sample messaging could be:

- General public – "GM foods are as healthy and safe as non-GM foods; advances in biotechnology can increase food production and reduce pesticide use and help the environment"

- Media –"the public needs to know more about biotechnology to understand its complexity"

- Educators/religious leaders – "discussion about the scientific and moral basis of GM food is important"

- Stakeholders – "government regulation ensures the safety of all foods, whether GM or non-GM"

*9. Monitor the program*
Keep track if it is operating on schedule. If not, why not?

*10. Evaluate the program*
Did the program work?  Did the publics see the message?  Did they believe it?  Has anything
changed?

- Use periodic surveys and focus groups to redefine your strategic direction
- Evaluate your web site (through e-mail and on-line surveys)


## *To avoid problems…*

- Do your communications strategy at the outset
- Engage your stakeholders and other key players early on
- Base your plan on solid research
- Engage the media as an ally, not an adversary
- Train credible spokespersons
- Make sure you have the right tools for each audience
- Evaluation your position regularly


## *Understanding the audience*

To communicate effectively, it is important to understand the audience. Gathering
information in the form of surveys, focus groups, and media audits helps in the understanding
of how people perceive the technology and the questions they have, so that relevant issues
can be addressed. The public is not a single entity; there are many different segments, each
with its own interests, information needs, concerns and priorities. "Key to effective message
development is the recognition that individuals are unique and that each is going to respond
to a message using their own filters of knowledge and experience" (Powell 1999).

It is important **not** to treat interest groups that oppose GMOs as 'the enemy'. Take their
concerns seriously; it is likely they reflect concerns of some others in the broader community.

In addition to the usual segmentation of audiences by gender, age, marital status, location,
ethnicity, profession etc, new segmentations based on attitudes towards technology are now
being used in science communication, and could be particularly relevant for biotechnology.
One such set of groups is listed as:
- Confident Believers
- Concerned
- Not Sure
- Technophiles
- Supporters
- Not for Me

To take an example, the Technophiles and the Supporters are much more trusting of scientists
than the Concerned. So, if you want to run an event that will engage those who are sceptical
of the science (the Concerned) you should ensure that you have a speaker from outside the
scientific establishment.

Cultural differences will also play a large part in deciding how best to communicate with an audience. Even within a single country there can be differences in the preferred ways in which segments of the audience prefer to communicate. For example, city dwellers may be happy with publications and television programs; rural dwellers may prefer local meetings or visits by experts.

## Credibility and trust

The audience must trust the communicator in order to be comfortable with the information given and to make informed decisions. Organizations gain credibility by providing fair and responsible information to the public and by providing access to a variety of additional sources. Coordinating and collaborating with other credible sources helps reinforce and consolidate the information provided. Working with credible agencies and organizations can also provide special access to target audiences that might not be reached otherwise.

If information is overwhelming, many people tend to want the opinion of a trusted opinion-leader. In this case trust can become a replacement for knowledge.

## Accurate and balanced information

The public is more inclined to trust information when it addresses both risks and balances and if it comes from a reliable source such as publicly-funded research bodies or universities. Sometimes international agencies have high trust as well, if they are a body who it has looked at both the benefits and risks before making a decision.

Developing accurate and comprehensive messages is one of the most difficult and time-consuming aspects of risk communication. Co-operation among government and other non-government organizations helps to ensure consistent messaging; lessens confusion and mistrust of science; increases the probability of public understanding and helps increase consumer confidence in the information. In case of scientific doubt, the public should be made aware of these doubts and all unknown factors and assumptions should be stated.

Communications must provide balanced information. While it is recognized that providing scientific information is an essential component of risk communications, it is also important to include information relating to ethical, social, economic, cultural and political views. The degree of background knowledge that people bring with them can have profound effects on their views or indeed whether they have a view at all. Consumers need information on what they perceive to be most important, rather than what is most important or most interesting to the communicator. This includes information that addresses the public's views, values, interests, needs, concerns and preferences.

## Influencing opinions

Once formed, opinions can be very hard to influence. In seeking to influence opinions it is important to know what percentage of the community may have set opinions and what percentage are still in the process of forming their opinions and open to influence. Influencing opinions is best done through trusted and established mediums, or persons, that the target audience are willing to place their trust in. If a figure, or organisation, is well trusted, members of the public will often base their own opinions on theirs.

### *Government Engagement*

In general, governments are seen as having some level of expertise about technical issues, but are not always strong on caring about public issues. Industry is usually seen as being strong on expertise about technical issues, but very low on caring about the publics' issues. NGOs, by comparison, are often seen as being fairly low on technical expertise, but very high on caring about the publics' issues. An ideal position is one that is relatively high in both technical expertise and caring about the publics' issues. One of the best methods of achieving this is through governments engaging with the public; listening to their issues and providing balanced technical information in return.

### *Multiple methods*

People trust information more when it comes from a variety of sources and channels. The public has acccess to a wide variety of media sources; as a result it is becoming increasingly difficult to find a single medium that has the breadth to reach the optimal number of individuals. Therefore, it is often necessary to use multiple communication methods to reach a broad audience, and to reinforce key messages. This may entail using mainstream media such as television and newspapers, as well as using fact sheets, the internet and community forums.

# 2) How to communicate effectively

### *Community Engagement*

### *Leading the multi-stakeholder dialogue*

To achieve its goals of gaining social acceptance for establishing policies to deal with agricultural biotechnology, the dialogue process needs to be a multi-stakeholder process from the start and to recognize the challenges facing such processes. Multi-stakeholder dialogues are based on the notion that the parties in negotiation almost always have both competing and complementary or compatible interests.

The challenge is to structure the negotiations so that these common interests are allowed to emerge and serve as the basis for a mutually beneficial resolution. In short, the negotiations become a joint discovery and problem-solving exercise. Another element is to focus the discussions on the needs and interests of the stakeholders and the reasons underlying their positions. As noted earlier, this includes attention to the content of the message itself, who delivers it, how it is delivered, and the whether the message presents all sides, positive and negative, of the issues to be considered. Four challenges that must be met by any multi-stakeholder dialogue on this topic include:

- Ensuring that all the relevant parties are involved in negotiations,
- Getting accurate scientific and technical information on the table, but acknowledging non-scientific perspectives,
- Promoting links with official decision-making bodies; and
- Establishing fairness and efficiency as criteria for evaluation of multi-stakeholder process

## Why involve the public?

- Improved public policy
- Greater public confidence in government
- A more informed and engaged public
- Stronger support for regulatory decisions
- To access knowledge outside government
- Trend towards more open, transparent and accountable government


## How to involve the public?

- Choose methods based on a well-defined objective
- Provide context
- Keep language/messaging simple, clear and relevant to each "public"
- Outcomes not predetermined
- Disseminate materials early
- Use realistic timeframes for the process
- Appropriate resource commitments
- Follow-up with participants:  report on results

## Who to involve?

- Who is affected?
- Who is potentially affected (future)?
- Who cannot be left out?
- Should other government agencies/departments be there?
- Which segments of the public?
  - Consumers
  - NGOs
  - Specific demographic groups
  - Industry
  - Local/marginalized/hard to reach groups


## *The public involvement continuum*

The following is one model, developed by Health Canada, of a process to use to engage the public on a particular issue.  The various levels are based on the current state of your target group's involvement and influence (Level 1 = Low involvement, Level 5 = High involvement). Communication tools and tactics vary for each level as the knowledge and sophistication of the target audience rises.

This model only provides a general guide to get you started.  You should always carefully consider the context in which your consultation/engagement efforts are taking place (i.e. at what stage of the policy development process are you currently at -- is it front-end, is it at the implementation stage; what key policy issues are being addressed, what publics/stakeholders are involved, what cultural or other contexts need to be accounted for, etc.).  You can take one of the "off-the-shelf" approaches that follow, but there is also an opportunity to use features from different approaches to meet your specific needs and those of your target audience.

- Level 1 – Inform or educate - use when
  - Factual information needed to describe policy or program
  - Decision already made
  - Public should know results
  - Need for acceptance of proposal before decision is made
  - Issue is simple
  - Information necessary to address concerns

- Methods to use
  - Advertising, social marketing (e.g. public service announcements)
  - Requests for proposals
  - Community mapping
  - Fact sheets; backgrounder
  - Focus groups
  - Toll-free telephone numbers
  - Info fair, exhibits
  - Information kits
  - Mail outs
  - Open house
  - News release

- Level 2 – Inform or educate- use when
  - Purpose is to listen
  - Policy decisions still being shaped – discretion required
  - May not be a commitment to act on advice received

  - Methods to use
    - Bilateral meetings with stakeholders
    - Community or public meetings
    - Parliamentary committees
    - Peoples' panels
    - Polling/surveys
    - Public hearings & seminars
    - Questionnaires
    - Commissions of inquiry
    - Workbooks

- Level 3 – Discuss - use when
  - Need 2-way information exchange
  - Opportunity exists to influence final decision
  - Want to facilitate discussion amongst stakeholders
  - Input may shape policy directions, program delivery

  - Methods to use
    - Advisory committees/board/council
      - Interactive website
      - Electronic conferencing
      - Online discussion groups
      - E-mail lists
      - Tele-voting

- o Issue conferences
- o Workshops

- Level 4 – Engage - use when
  - o Citizens should talk to each other on complex, value-laden issues
  - o Citizens can shape policy directions
  - o Opportunity for shared agenda setting or open timeframes
  - o Options generated together will be respected

  - Methods to use
    - o Charette
    - o Constituent assembly
    - o Delphi process
    - o Retreats
    - o Roundtables

- Level 5 – Partnering - use when
  - o Want to empower citizens or groups to manage process
  - o Citizens or groups want to develop solutions themselves
  - o Government ready for "enabler" role
  - o Agreement to implement citizen and group solutions
  - o Develop programs in partnership

  - Methods to use
    - o Citizens' juries
    - ▪ Consensus conference - citizens' consensus conference is a communication activity which integrates the public's opinions about a new technology into the decision-making process. The recommendations of the citizens, based on their views and opinions on biotechnology, are relayed to decision-makers/
    - o Deliberative polling
    - o Search conference
    - o Study circles/groups
    - o Think tanks

For more information on the methods outlined in Levels 4 and 5 above, please see Annex D.

## *Research methods*

### Introduction

Market research enables companies, governments and stakeholders to gain a greater understanding of the market (domestic and global) and consumers/the public. Analysis of relevant data gathered, allows for the identification of one's strengths within the market and areas where improvements are needed, where opportunities exist and areas that present potential threat. Market research is important when new products/services are introduced into the market (i.e. new technologies) as public acceptance is a major contributor to success (both immediate and long term).

Market research techniques often analyze a business within more than one external environment. For example, one technique known as "PEST", considers a business within four

external contexts: the political environment, economic environment, social environment and technological environment. The business is evaluated within each environment, based on impact. For example, what is the effect of the political implications regarding biotechnology – political influence and regulatory systems? Using a variety of market research techniques furthers one's ability to work effectively, as you gain greater understanding of the environment in which you operate.

## Functions of research

1. It provides a greater understanding of the marketplace; consumers and competitors.
2. Market research allows us to acknowledge consumer perceptions and understand why they have these opinions.
3. Enhances our ability to accommodate the public's needs (i.e. increased education, transparency) and potentially amend misperceptions that may exist.
4. Allows for effective data gathering and analysis which helps us to identify public knowledge gaps: areas where the public does not have enough information or appropriate information to make an educated decision/opinion.
5. Identifies relevant information the public needs and the most effective method of dissemination, based on knowledge gaps identified.
6. Market research can enable us to have a positive impact on public perception and opinions within the market.
7. Allows us to identify areas in the market which present opportunities and those that pose a potential threat.
8. Facilitates the identification of our strengths and weakness'.
9. Provides analysis from a variety of viewpoints/environments (e.g., environmental, political, social, technological)
10. It may confirm assumptions and hunches about the state of public opinion on an issue.
11. It may clarify questions on which limited or conflicting data is available and may not only reveal what people are feeling, but why.
12. It helps us reorient our thinking on a public relations problem; helps us structure effective programmes; and helps us predict the future.

## Research methods

Choosing the appropriate research method is critical to gathering of relevant information and data. Before deciding on a research method it is important to establishing what information you will need to accomplish you goals. Ask yourself, what it is that you want to know and why you would like to know this. Next determine the group of individuals you want to research: it is important to ask questions of a sample of people that is just like the population you want to know about. There are a variety of research methods from which to choose, however, no single method is adequate to measure or fully understand what people think or why they behave as they do.; use multiple methods and measures.

## Surveys

- Good for measuring knowledge, beliefs, attitudes, and opinions; not great for measuring intentions and behaviours.
- Ensure the sample of respondents is representative of the population you wish to study.
- Language and cultural difference matter. People have varying experiences with surveys, and some concepts are very difficult to translate into another language.

- How you ask a question can strongly influence the answer you receive; the order or the questions makes a difference as well.
- Choosing the appropriate survey method is important: phone, paper and pencil/mail, internet and in-person. Asking the same question of the same people using different methods can yield different results.
- It is important to test your survey to ensure that it is effective and the questions are clearly understood.

## Phone Surveys

Phone surveys can be completed and analyzed quickly, can reach a large sample, and have fairly good response rates. However, this method can be expensive and interviewers must be trained so they don't unintentionally bias the responses. It is preferable in limiting the length of these surveys by ensuring the questions are short and simple.

## Mail Surveys

Mail surveys can ask more complex questions, and provide more elaborate answers. They are relatively inexpensive however the response rate is generally very poor, and people are reluctant to put some answers into writing.

## Internet Surveys

This survey method is fast, inexpensive, reaches a large sample and can include audio/visual material for respondents. The main difficulty with internet surveys is that internet access varies significantly both across and within countries.

## Face-to-Face Interviews

Face to face interviews are time consuming and expensive as they require trained interviewers, and there is a lack of perceived anonymity. This survey method does however, allow for non-verbal responses to be analysed and can be a good medium for collecting qualitative data. Like the internet survey, this method provides the opportunity to present audio/visual and written materials to respondents.

## Focus Groups

- A small discussion group of approximately 8-10 people. The discussion usually lasts less than two hours and uses a skilled moderator to guide the discussion.
- The discussion examines a set of pre-determined issues.
- These sessions are normally recorded and the responses of the group are then analyzed.
- Focus groups can provide insight into and issue or problem, and are more flexible, in design, to explore ideas that surface.
- More expensive as the moderator must be paid, incentives to participate are necessary, and multiple focus groups are necessary to ensure a large enough sample is used to draw conclusions about a general population.

## Mental Modeling

- An open-ended / unstructured face-to-face interview. Interviews are recorded and transcribed; analysis examines the constructs/ideas generated by each individual.
- Mental modeling allows each respondent to decide what is important to talk about, and permits the analysis of myths, metaphors and analogies.

- This method of research is expensive, time consuming, and the samples are not large enough to permit conclusion about a population.

## Media Content Analysis

- Examines the content of written or televised news coverage; looks for patterns of words or ideas in these materials, information is typically coded using a "guide".
- Can provide a quick sense of what information people may be exposed to, can track issues over time and across cultures.
- Initial coding scheme can be time consuming and coders must be trained so that they are all making the same judgements.
- It is critically important to understand that what is in the news doesn't necessarily represent what people think.

## *Networking and partnership with influencers*

## Why are networks and partnerships important?

Networks and partnerships are important as they enable sustainable development through collaboration among sectors, institutions, and the participation of all stakeholders and individuals. They also create opportunities for communication, knowledge sharing and learning.

Effective networks and partnerships can be characterized by the following:

- *A pre-existing connection:* Founded by networks of people and organizations that have experience working together; establishing a relationship that is based on mutual trust and common norms facilitate cooperation. Make sure everyone shares a commitment to a common vision.
- *Strategic fit:* A strategic fit consists of four main components:
    o The project goals
    o The project methodology
    o The project represent mutual benefit (value-added)
    o Complementary functional roles for all partners.
    Agendas and needs should be shared openly; though they do not need to be identical they should be compatible.
- *Donor relationship:* Donors provide resources and mechanisms for control for networks and partnerships, such as; formal agreements, and monitoring and reporting procedures.
- *Leadership commitment:* Strong support from senior leadership in partners motivates staff to participate and be accountable.
- *Governance and management:* Partners share control. Effective cross-organizations systems for communication and information-sharing are developed. Maintain frequent and open communication.
- *Mutual Trust:* Partners must have confidence that each will carry out agreements and joint activities with quality. Trust can develop or weaken through repeated cycles.
- *Joint Learning:* Partners will share new experiences and conflicts. Joint learning does not need to be extensive or very formal.

## Benefits of effective networks & partnerships

- Accomplish work that would be difficult to accomplish alone.
- Avoid unnecessary duplication of work among organizations.
- Sharing the resource costs
- Provides ample opportunities for mutual learning and knowledge acquisition.

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## Who should be included in networks & partnerships?

When considering a strategic approach to efforts to enhance public perception of agricultural biotechnology, you should consider the following institutions as potential partners and/or network members. Each has potential advantages and disadvantages.

1. Universities/Academic institutions
   Advantages – high credibility, trust, access to latest information (especially scientific)
   Disadvantages – ability to contribute financial resources often limited, availability may be limited due to academic commitments; bureaucracy often rivals that of government

2. Business and Industry
   Advantages – may be able to contribute financial resources, usually less bureaucratic to deal with, consistent messaging trust
   Disadvantages – credibility and trust issues (less so for associations than individual companies), potential short-term focus on results

3. State/local governments (including agricultural extension specialists)
   Advantages – credibility, trust, consistency of messaging, common outlook
   Disadvantages – ability to contribute financial and human resources often limited, political and bureaucratic considerations

4. Non-governmental Organizations (NGOs)
   Advantages – credibility, trust, commitment, appreciative ness
   Disadvantages – ability to contribute financial and human resources often limited, dynamics of relationship can be challenging

5. Media
   Advantages- information dissemination to public, credible information channel (especially scientifically aware media), can reach large audience (domestic and global)
   Disadvantages- misinformation is common and can lead to negative public perceptions and misguided opinions, limited ability to control how and what information is relayed to public.

## *Working with Non-governmental Organizations (NGOs)*

## Introduction

The diversity of NGOs strains any simple definition. They include many groups and institutions that are entirely or largely independent of government and that have primarily humanitarian or cooperative rather than commercial objectives. NGOs include charitable and religious associations that mobilize private and public funds for development, distribute food and promote community organization. They also include independent cooperatives, community associations, and other "civil society" groups such as water-user societies, women's groups and pastoral associations. Citizens' groups (e.g. peoples' organizations in the Philippines), professional and industry associations that raise awareness and influence policy can also be characterized as NGOs.

Achieving the full potential benefits of NGO involvement implies enhanced roles for NGOs earlier on in the project cycle. NGO involvement can contribute to the sustainability and effectiveness of projects by introducing innovative approaches and promoting community participation. NGOs can help expand project uptake and reach, and can facilitate greater awareness of diverse stakeholder views. This being said, choosing to partner with NGOs can also mean, due to often limited financial and human resources, not being able to partner with other organizations. How you choose is a function of your organization's own needs and strategic objectives.

**Key issues in working with NGOs**

## A. NGO-Government relations

- Consider conducting a government-NGO relations study.
- Keep in mind that government-NGO collaboration is not possible/ desirable in all cases.
- Always seek government-NGO complementarily.
- Understand how government policies influence the NGO sector and, where possible, promote an enabling environment for NGOs.

## B. Identifying appropriate NGO partners

- Selecting an appropriate NGO partner involves: i) gathering information about the NGO sector; ii) establishing relevant selection criteria and; iii) choosing a suitable selection process.
- Clear selection criteria should be established based on specific project needs.
- Organizational capacity should be assessed according to an NGOs proven track record, not just its stated goals.
- It is important to identify "capacity-building" needs and strategies (be sensitive to the fact that NGOs do not often have the same capacity or resources as government or industry).
- Maximum transparency should be ensured in the selection process.

## C. Capacity Building

- Share all relevant project documents with participating NGOs.
- Consider the appointment of an NGO liaison officer.
- Organize a bilateral (e.g. government-NGO) information-sharing workshop
- Consult with NGOs on appropriate strategies to support their institutional development.

- Where appropriate, build a training component for NGOs into project design.
- Encourage partnerships between international and local NGOs.
- Promote networking and information-sharing among NGOs.

## D. Time and Flexibility Issues

- Seek NGO/community input early on in the project cycle.
- Establish clear mechanisms for responding to local views and needs.
- Use mid-term review process to adapt project priorities/processes as necessary according to local input.
- Be prepared for possible extra staff/time needs early on in the project cycle.
- Be aware of potential time lags/delays and the risk they pose to participatory processes.
- Ensure NGOs have an adequate understanding of project time-frame and deadlines.
- In areas where NGOs have a recognized comparative advantage, take steps to maximize their institutional autonomy.

## E. Funding and Contractual Issues

- NGOs are generally cost-effective. They should not, however, be viewed as a "low-cost alternative" to other types of implementing agencies.
- Establish mutually acceptable fees and overhead costs. NGOs should not be expected to provide services free of charge or at lower than market rates unless according to a co-financing agreement.
- Clarify the expected status of NGO involvement (e.g.: informal unpaid advisor, paid consultant, contractor, etc.) from the outset.
- Adapt standard contract agreements as necessary to meet specific needs of NGOs/community groups.
- Write contracts in simple language.
- Consider using a Memorandum of Understanding or other alternative form of contract.

## F. Procurement and Disbursement Issues

- Use simplified bidding documents, where appropriate.
- Consider the use of alternative procurement practices.
- If necessary, make provisions for advance payments.
- Provide training for NGOs in procurement and disbursement procedures.

## Media management

### Introduction

In considering the role of the media, one must keep in mind that, generally, it is not they who wish actively to influence public opinion. In fact, the media are only the medium of debate. However, they have an important filter function. They determine not what, but about what, people should think.

As part of your overall communications network, the media should be targeted as often as possible to help deliver your key messages. There are some occasions (e.g. in cases of inter-ministerial conflict) that use of the media is not considered appropriate.

In building your relationships with the media (as with any stakeholder group), it is easier if you start with journalists who have a more positive outlook on the potential benefits of new technologies, including biotechnology. Once you gain a degree of comfort with these media, you can expand your efforts with those who may be more sceptical. With all journalists, however, maintain a helpful attitude. Agricultural biotechnology is a complex, multi-faceted topic and busy reporters rarely have the time to do in-depth research. Anything you can do to help them with their comprehension of even the most basic concepts will be appreciated.

## Guidelines

The following guidelines add up to the rule that effective media relations requires following the "five F's:" dealing with journalists is a manner that is *fast, factual, frank, fair* and *friendly.*

1. *Talk from the viewpoint of the public's interest, not the organizations.* Outlining the environmental benefits of genetically-modified crops (e.g. less pesticide use, less fuel burned and greenhouse gas emissions created) over the economic ones will likely be more persuasive.
2. *Speak in personal terms whenever possible.* When many people have worked on developing a new policy or product, it becomes difficult for the leader or executive to say "I."
3. *If you do not want some statement quoted, do not make it.* Spokespersons should avoid talking "off the record" because such statements may well wind up published.
4. *State the most important fact at the beginning.* Your natural inclination may be to list the facts that led to the final conclusion, but such an approach doesn't meet the needs of the media.
5. *Do not argue with the reporter or lose your temper.* Understand that the journalist seeks an interesting story and will use whatever techniques necessary to obtain it.
6. *If a question contains language or words your do not like, do not repeat them even to deny them.* Journalists often use the technique of putting words into the subject's mouth.
7. *If the journalist asks a direct question, give an equally direct answer.* Not giving one is a common error interviewees typically make.
8. *If a spokesperson does not know the answer to a question, simply say "I don't know, but I will find out for you."* With this response, the spokesperson assumes the responsibility of following through.
9. *Tell the truth, even if it hurts.* In this era of scepticism and sometimes, outright hostility, the most difficult task is often simply telling the truth.
10. *Do not exaggerate the facts.* "Crying wolf" makes it harder to be heard and believed next time.

## Why and when to engage the media

The media is only an intermediary channel to reach a specific audience, so it is important to be clear when it is easier to reach that audience directly, and when using the media may be

the best medium. The benefit of using the mass media is that it has a very wide reach generally, is already established to a particular target audience and can be quite cost effective. The risk of using the mass media is that you have little control over how the public interprets your message. If you are working with a 'hostile' media, those not inclined to agree with the messages you are running, it is sometimes best not to use the media for some communications but rather attempt to reach the target audiences directly. Also, if the information you wish to disseminate is quite complex, the mass media might not be the best medium.

## Media monitoring and tracking

The media is only an intermediary channel to reach a specific audience, so it is important to remember that you need to evaluate if you are reaching that audience rather than simply if you are gaining media coverage. It is also valuable to track actual media coverage and compare it with an organization's perception of media coverage. Negative stories tend to make a bigger impact on an organization than positive ones. In general, people perceive media coverage about their organization is more negative than it often actually is.  It is also useful to measure the actual impact of the media coverage. Is the story really being noticed and affecting opinions or knowledge? Letters to the editor and follow-up news stories are a good indicator of public interest in a newspaper stories, but need to be differentiated from activist interest that might be driving these things, and sometimes be quite separate from public interest.

## Media training

Media management has become such a specialised skill.  If you are putting a media spokesperson into an adversarial arena who does not have media training, they are likely to come off poorly in media debates and coverage. Media training is increasingly important for staffs who deal with the media.,By simply best understanding how the media works and working with journalists for best results, you will maximise your message and minimize unfavourable coverage. This can include an understanding of the structure of media releases, journalists' deadlines, the role of editors and the importance of visual material and personal presentation (e.g. wardrobe, body language) for television.

## Media relations

Planning a media relations program helps organizations identify what information they want the media to report, and how they want their story told. Critical steps in planning a media relations campaign include:
- identifying the organization's goals and objectives
- identifying the key publics you want to reach
- identifying the activities or issues which help advance your goals and objectives
- identifying key points to publicize
- identifying the media that will best carry your message
- preparing or gathering the materials for the media
- distributing those materials by the most appropriate means
- arranging and preparing for media interviews, if appropriate
- evaluating the media coverage received.

To do their jobs, journalists and editors need a continual supply of news tips and background materials. Communications materials and activities that attract media attention include:

- media advisories to report on upcoming events, press conferences, etc
- media information kits, to provide information about new legislation or programs. Kits could include news releases, fact sheets, answers to frequently asked questions, new publications and reports and contact names for additional information
- access to expert spokespersons to provide media interviews
- arranging technical briefings and panel discussions to educate and inform the media
- responding to misleading or erroneous information by writing letters to the editor
- tailoring materials for specific stakeholders (producers, grocers, manufacturers) by providing background material and technical information for newsletters and journals.

Biotechnology is fortunate in that media stories can cover many fields – science, economics, politics and international trade. It is also about intellectual property rights, ethics and democracy. Be aware that in some countries, journalists do not feel it is their job to sell the public on science, and will adopt a skeptical viewpoint. In other countries, however, journalists take on an educational role to promote dialogue.

## *Risk Communications*

### Risk defined

*Risk:* the measure of the degree of hazard, defined as a combination of the probability and severity of adverse effects on, organizational performance, health, property, the environment, or other things of value.

Risk communication is context-dependent and will vary with the issue and the audience. It conveys or transmits information between interested parties about: a) Levels of health or environmental risks, b) The significance or meaning of these, or c) Decisions, actions or policies aimed at managing or controlling health or environmental risks.

Interested parties include government agencies, corporations, and interest groups, unions, the media, scientists, professional organizations, public interest groups, and individual citizens.

### What risk communications is…
"Effective communication is a two-way activity based on mutual respect, trust, and the open exchange of information" [about risk]. (Covello, V. 1989)

### What risk communications isn't
- Teaching, selling or telling
- Public relations
- Crisis communications
- Public education or social marketing
- Something undertaken at or near the end of the risk management process

### Main components of strategic risk communication

- Knowledge/evidence-based (i.e. stay factual and out of the realm of responding to emotions, fears, misconceptions)

- Empirical  research is key
- Stakeholders are central; it's about them, not us
- Action **and** words

## Why strategic risk communications?

- Issue is contentious or may raise moral/spiritual/religious/ethical concerns
- Decision will impact stakeholders, citizens
- Decision-maker looks for acceptance and adherence
- A behavioural outcome is desired or necessary
- Helps anticipate likelihood of success or failure and what communications are required or appropriate

## Strategic risk communications process

- Define the Opportunity
- Characterize the situation
- Assess Stakeholder Perceptions of Risks, Benefits &  Tradeoffs
- Assess Options & their Acceptability to Stakeholders
- Develop & Pre-test Strategies, Risk Communications Plans & Messages
- Implement Risk Communications Plans
- Evaluate Risk Communications Effectiveness

## *Key messages*

Key messages should be based on scientific data, but presented in a way that encouragess trust and a sense of empathy with the risk perceptions of the audience. It can be important to test your key messages on a small sample of your target audience, as the perception of their effectiveness from within an organisation can be very different from their perception outside the organisation.

# 3) Communication tools

## Media releases

In preparing news for radio, television, newspapers or new media, the questions Who? What? Where? When? Why and How?, should be answered. Preferably, they should be answered in the first sentence or the first paragraph of a media release with details following.

Example: **ALDERSYDE, Alberta, November 6, 2007** - The Honourable Gerry Ritz (Who?), Minister of Agriculture and Agri-Food, today (When?) announced that the federal ecoAgriculture Biofuels Capital (ecoABC) initiative (How?) would contribute $638,559 (What?) to help build a biodiesel plant in Aldersyde, Alberta (Where?). The plant has also received direct equity investment from farmers totalling $275,000. Western Biodiesel Inc. is constructing and will operate Aldersyde's new $8 million biodiesel plant. The plant is expected to begin production this December and produce 19,000,000 litres of biodiesel annually.

The release must be tailored for its medium. Write news stories for newspapers; articles for trade and business publications; short, radio-style releases for ratio; TV news scripts with visuals for TV.

Experienced radio and TV news editors suggest these guidelines: (1) Send only one copy of a release and send it to the news director by name (2) Write releases in conversational style and broadcast length (less than 1 minute 30 seconds of airtime) (3) Be timely – news that has appeared in that morning's newspaper is no longer news (4) Call the news department with "breaking" news (5) Give advance notice of news conferences. Here are some specific guidelines:

Releases should be type cleanly on standard-sized letterhead (as appropriate) and transmitted by newswire, fax or e-mail to media whose audience would have interest in the subject matter. It is good practice; if possible, to hand deliver releases to local outlets since you may be able to speak directly to the editor to "pitch" your story.

> IDENTIFICATION: The name, address, telephone numbers (land line and cell), and e-mail of the source should appear in the upper left of the release. The release should also include the name and contact information of the person to call for more information (e.g. media relations/communications support person).

> RELEASE DATE: Most releases should be "immediate." As the media are in competition to be "first" with a story, requesting a delay before a story becomes "official" is done at your peril.

LENGTH:  Never make a release two pages if one will do.  Edit your material tightly.  Make sure it's accurate, timely and include meaningful quotes from your source/spokesperson.

STYLE:  Use the "tried and true" summary lead (who, what, when, where, why and how) most of the time.  Double-space.  Editors prefer short sentences with active verbs (e.g. he said, she announced, et.c.).

CHECK:  Proofread your release and, if possible, have someone else not familiar with the story look it over to see if they understand it.  Make sure spelling and grammar are 100 per cent correct.

## Fact sheets

Fact sheets, including pamphlets and brochures, are a means of providing effective information on biotechnology to a general audience. A variety of government and non-government organizations in APEC economies have used this medium to inform the public about the issues surrounding agricultural biotechnology. Fact sheets are generally short in length and can be targeted to meet a specific information need or to deliver specific messages. They are also flexible enough for use in a variety of settings such as grocery stores, health food stores and libraries.

## Characteristics of Fact Sheets

Two key characteristics of fact sheets are content and design:

### CONTENT

Fact sheets should provide information that is balanced, accurate, consistent, clear, and interactive. Fact sheets, pamphlets and brochures are often targeted to specific audiences and are designed to address the information needs of that particular audience. Focus testing information in fact sheets, before their release, is also beneficial to ensure the information is readily understood. Fact sheets should also provide readers with access to more information by providing a phone number, mailing address, e-mail address, Internet site address or fax number.

### DESIGN

The length of the document and the level of technical language should reflect the needs of the intended audience. Short, easy-to-read fact sheets are suitable for the general public. Supplementary brochures with more in-depth technical information can complement the fact sheets and should be accessible for people who require more information. The fact sheet should not be crammed with text and should have some "white" space, as well as interesting and relevant design aspects to attract the reader. Text and design elements should "flow" and tell a story in a concise fashion.

For fact sheets that are to be distributed through local grocery stores or other similar locations, it is beneficial to have bright colours to attract potential readers. Graphics are a way to interest audiences in reading materials and can be very beneficial in aiding comprehension.  If preparing fact sheets for schools, it is helpful to provide some accompanying notes and exercises for teachers to use.

## Government Fact Sheets

Government ministries and agencies have developed a variety of consumer fact sheets on agricultural biotechnology. These documents cover diverse topics and range in length and technical depth.  One example is a detailed treatment on the topic of regulations, entitled *Questions and Answers on Biotechnology Permits and Genetically Engineered Plants and Microorganisms* by the United States Department of Agriculture, Animal and Plant Health Inspection Service (www.aphis.usda.gov/biotechnology/permitqa.shtml ). The question and answer format of this document which focuses on commonly asked questions, and provides information on the role of government, is attractive and relevant to consumers. Another good example of the question and answer format is a fact sheet produced by the Government of Hong Kong's Food and Environment Hygiene titled *Know More - Genetically Modified Food, Myths and Facts* (www.fehd.gov.hk/safefood/gmf/pamphlets/myths1.html).  Food Standards Australia New Zealand has a produced an attractive brochure for the public, *GM Foods and the Consumer* (www.maf.govt.nz/mafnet/press/archive/2000/pub02_00.pdf).


## Non-government Fact Sheets

Examples of non-government fact sheets range from one page, "quick information" documents, to more lengthy ones that contain more detailed information.  In addition to providing general and background information on agricultural biotechnology, it is important to address specific consumer questions surrounding the science behind the products of biotechnology.
Fact sheets, pamphlets and brochures play an important role in the communication of biotechnology. They are able to:

- provide a wide range of information from a variety of sources
- reach a diverse audience
- be produced at a reasonable cost
- be distributed at locations that are very convenient for consumers, such as grocery stores.
- target readership appropriately by employing a diverse range of formats and utilizing appropriate language. For example, children and youth are an ideal audience. Tools that enhance understanding of science can be complementary to in-school teaching activities and lead to better informed adults in the future
- be updated easily as new information becomes available.


## Newsletters and publications

Newsletters are a useful medium for providing information on evolving issues and developments in agriculture and food biotechnology. Governments, non-government organizations, committees and industry within APEC economies produce a variety of newsletters geared to specific areas of interest. However, recent trends in the practice of communication about science and technology are questioning the value of printed newsletters when compared to newer technologies such as the Internet and traditional discussion meetings when complex matters are involved. If you are considering using a newsletter, ensure you evaluate how effective it is.

**Newsletters**

Effective newsletters are clear and to the point. Newsletter writing, as with all nonfiction writing, must be logical, employ carefully chosen words, and, demonstrate a unity of approach and subject matter. Good newsletters share many of the following characteristics:

- objectives are well defined as part of the editorial policy for the newsletter
- the target audience is clearly identified
- the content is relevant to the readership
- writing is professional and objective
- the design is attractive, professional and consistent from one issue to the next
- each issue is produced on schedule
- a phone, fax or e-mail address is provided to solicit reader feedback
- reader interests are identified via regular surveys or through reader participation on editorial advisory groups
- reader distribution lists are well maintained.

Special issues of newsletters are often produced to address specific questions in more detail than would normally be possible in a single issue. Information on food biotechnology can be placed in newsletters which are not focused exclusively on biotechnology. Providing information through nutrition-focused newsletters is useful in reaching food professionals and specialists who interact directly with consumers. Articles submitted to association newsletters are often accepted. These "outreach" activities are another way of targeting messages to specific audiences, i.e., industry, consumers, decision and policy makers.

# Education resources

A major issue for gene technology and biotechnology is that a small amount of education often increases concerns. Education resources, as opposed to information resources, should be targeted at groups able to engage in a deeper level of learning, such as schools. Education resources for schools work best when they are developed with consultation with teachers, to ensure that they are relevant to their classroom teaching.

# Case Study

*Biotechnology Online School Resource*

Biotechnology Australia had developed an online education initiative that provides teachers and students with information on biotechnology and stimulates discussion about the social implications of biotechnology that goes beyond the classroom.

The Biotechnology Online School Resource was produced in 2001 and has since been significantly updated and is now the number one resource for teaching biotechnology in high schools in Australia.

The resource has been designed to support teachers' interest in introducing biotechnology to their classrooms. It is an information rich web site and has integrated materials of both off-line and on-line activities that allow teachers to select components of the resource and tailor their lesson plan to the needs of their students.

The resource provides balanced and factual information about biotechnology and gene technology. It serves as a good starting point for those wishing to gain some basic understanding about the science behind biotechnology and examine some of its applications.

There was a perceived need to provide students and teachers with current information about biotechnology in order to help them understand the subject, better inform them to take part in public debates on issues such as genetically modified food and cloning. Teachers keen to introduce biotechnology into their classrooms were inadequately resourced and they required support to meet students' information demands.

The resource has actually designed by science teachers, via an expert reference group, which is one of its winning points with science teachers, making it relevant to their curricula and in a language most teachers find they can relate to.

The resource can be viewed at: www.biotechnologyonline.gov.au .

## Videos and audios

Videos are an entertaining medium. As well as enhancing the learning process through visual images and narration, videos can portray certain aspects of biotechnology more completely then other communication media. The downside is that they are expensive and usually have a short "shelf life".

## The Internet

The Internet provides an effective communication medium to reach both national and international audiences. While the Internet is more widely accessible in some countries than others, it is an expanding and potentially cost-effective communication medium for providing accurate, balanced, competent and interactive information.

The advantages of using the Internet to communicate about biotechnology include:

- internet sites promote interactive communication due to the speed and ease with which dialogue can be sent through e-mail;
- diverse audiences, including the general public and other governments, can be reached;
- internet sites can be updated quickly and inexpensively whenever changes or corrections are necessary;
- balanced information be promoted through links to other information sources. Internet users should be cautioned, however, to validate the source of information. Some sites may not be monitored or edited regularly; others may provide mis-information or biased reports.

### Internet site attributes

The three main activities of Internet users when visiting a site are reading text, viewing images and interacting with the Internet site interface, e.g. using links and writing e-mail. It is, therefore, necessary to make these activities easy and informative for the visitor. Different attributes, such as content, readability, navigation design, updates, links, contact information, graphics, download time, compatibility, and colour facilitate these activities:

## Content

The content is the most important aspect of the Internet site, as the Internet is an information source for almost 90 per cent of users. Internet sites that are rich in content and reader-friendly are more likely to meet the information needs of visitors in the simplest, most timely manner. Effective communication techniques, such as providing accurate, balanced, and competent information (see the "Effective Communication" section of this guide), should be applied to meet the needs of target audiences.

## Readability

Reading on a computer is more difficult than reading from the printed page. Studies have shown that reading speeds are about 25 per cent slower on a monitor than on paper. It is, therefore, beneficial to keep words, sentences and paragraphs short. Meaningful subheadings should be used to break up and summarize text. Many readers will just scan Internet pages, reading only the subheadings and stopping when they find the information they need. With respect to presentation of the text, it should be as clear and uncluttered as possible and the columns should be narrower than the screen. Use logical screen "breaks" whenever possible. To improve the readability of text, it is beneficial to use white or "close to white" background with dark text.

## Navigation design

Attributes that make information easier to find or renders it more accessible, are of undeniable benefit to a site. Consistency in presenting information makes navigating a site easier. From predictable navigational conventions to a consistent appearance, a reader-friendly Internet site makes it easy for readers to develop reliable expectations about the site and its pages. Good navigation design can be helped by:

- keeping the pages neat and uncluttered
- accentuating new and updated information;
- providing an internal search engine that is accessible from every page;
- providing an index (links to different sections in the site, such as the site map, search engine and home page) on each page in the same location, including having an index at the top and bottom if the page scrolls down;
- providing easily accessible shortcuts to the paths that visitors will want to follow most often; and
- providing every page with a link to the home page.

The Internet site of the Canadian Food Inspection Agency is very consistent in its appearance and provides the same index on each page (www.inspection.gc.ca/english/toce.shtml). To enhance the ease of navigation, the index appears at both the beginning and end of its pages.. The *United States Department of Agriculture (USDA) Biotechnology and Scientific Services* Internet site (http://permanent.access.gpo.gov/lps3025/index-6.htm) provides a search engine and links to help with internal navigation and navigation to other Internet sites.

## Updates

An Internet site needs updating and maintenance to evolve, stay current and address new issues. Implementing a plan for "regular maintenance" is highly recommended. Such a plan should include removing outdated material and updating older content, as needed. Informing visitors of what is new and what has changed allows for quick access to new information. This is demonstrated in the *United States Department of Agriculture (USDA)* Internet site

through the highlighting of all updated information with a "new" symbol. A revision "date stamp" on *Japan's Agriculture, Forestry and Fisheries Research Council Secretariat* Internet site assures the viewer that information is current.

## Links

By providing a list of useful links, a site can provide visitors with additional information and added perspectives on the subject. It is important that links be kept up-to-date and that the links on the page go to the pages intended. Links should be checked regularly to avoid links that go nowhere. The more informative the links are the better. Links enhance the site and benefit the reader by providing more information.  An example of a particularly useful link page is the New Zealand Ministry of Agriculture and Forestry site (www.maf.govt.nz/mafnet/index.htm).

## Contact information

More than any other communication media, the Internet sites differentiate themselves by their interactivity. Internet sites should allow visitors to react and respond immediately to what is written, either through e-mail feedback, discussion boards and chat rooms.  Having an e-mail address, a physical address or a telephone number available on the Internet site makes a site more interactive.

## Graphics

Graphics are best used as a supplement to text, and not as a substitute for it. They should be kept to a minimum to decrease download time. Multimedia effects should only be used when they truly add to the user's understanding of the information. Animated graphics reduce the readability of the site. It is very difficult to concentrate on content when something is blinking or moving on the page. Oversized graphics take too long to download and should be avoided.

## Download time

People go to Internet pages because they want to get information efficiently.  At most, an Internet page should take 15 seconds to download.  To ensure fast-loading pages:

- build relatively small pages;
- use links to connect these smaller pages within a larger Internet site; and
- reduce the size of the graphics files, providing less data to download.

## Colour

The use of colour can create a certain mood, and can add emphasis and attract attention, as well as entertain the viewer.

Colour can be used to convey information or to draw attention to where it is really needed. Bright and bold colours accentuate important information such as new issues or recent updates to the Internet site. By using the same colours for each page a connective flow is attained, associating each page to the particular Internet site.

## New media

### Why use new media?

Recent advances in technology have enabled electronic media to offer a useful alternative to printed media. Electronic works can go beyond the printed word, offering not only text, but sound, colour, animation and interactivity, thereby putting users in control of their own experience.

The formats offered by Internet-based media for communication directed towards the general public include conventional forms of print and broadcasting as well as Internet-specific media, e.g. information portals, e-zines, forums, podcasts, bulk e-mails, SMS (text message) alerts, video and audio clips, webcasts and weblogs (see below for descriptions of some of these).

These new media partly enhance the interactive character of communication and facilitate the expression of users' opinions on topics (weblogs, forums), and are able to raise the speed of dissemination of information (*i.e*. to maintain a 'live' character, for example through SMS alerts, podcasts, webcasts and news feeds).

### Types of new media

The term **e-zine** refers to an Internet portal in the style of a magazine. It offers comprehensive editorial content, which, as a rule, is composed by professional journalists and authors and contains such items as magazine articles, opinions (columns), interviews with prominent personalities, etc. In appearance, the e-zine is based on the classical periodical magazine (illustrated magazines, specialist and popular periodicals), although community functions such as evaluation systems and commentary functions commonly are implemented.

**Podcasting** refers to the production and offer of media files (as audio or as video podcast, also known as vodcast) on the Internet. This word is coined from the terms 'iPod' and 'broadcasting'. An individual podcast is therefore a series of media contributions (episodes) that may be received automatically through a computer. One may view podcasts as radio or television transmissions that may be consumed irrespective of broadcast times.

A **webcast** is similar to a television broadcast in aim but is conceived particularly for the Internet medium and also outpaces television by facilitating interaction. Programmes offer mostly live content, but most streams also are available later as recordings. Originally, webcasts simply were transmissions streamed through the Internet. The content type of webcasts is more likely to be of a teaching or scientific nature rather than for entertainment.

A **weblog** (English hybrid of the words 'web' and 'log', commonly abbreviated to '**blog'**) is a digital journal. It is written on the computer and is published on the internet. Commonly, a blog is "endless", i.e. is a long, inversely chronological list of entries, which periodically are wrapped up. It may be seen therefore as a website which, in the ideal case, incorporates a content level only. For the publisher ('blogger') and his or her readers, a blog is an easily manageable medium for the presentation of aspects of one's own life and of opinions, often on specific groups of topics. When expanded, it may also serve the exchange of information, thoughts and experience as well as communication and, therefore, is very comparable with an Internet forum.

Government departments and agencies can employ a mix of electronic media and traditional print media to reach as large an audience as possible, while minimizing costs.

## Advantages and disadvantages

The potential speed and cost saving advantages of new media must be tempered with caution, particularly when dealing with science-based technologies such as agricultural biotechnology.

The formal and informal communication within the scientific community is increasingly overlaid with science communication which occurs in the public sphere and which, furthermore, is increasingly influenced by non-scientists. Consequently, it has become increasingly difficult to distinguish between 'correct' and 'false' information, or between reliable, structured data and random information.

Many offers of information are tinted strongly by personal inclinations, derived either from the intent of the author or of the institutions with which he or she is associated. The situation is complicated further by the fact that websites offer an increasing quantity of information for which the original authors are no longer able to be determined. In this transformed communication landscape, even scientists often are unable to determine whether all scientific information has been validated internally before being shunted towards the broader public. Effectively, the rules of conventional scientific publishing – including the rule of peer review – have been waived in the Internet.

New media, while potentially less costly to produce and distribute than traditional print and broadcast media, still require a fair degree of technical sophistication and support to ensure ongoing quality and consistency. Once a quality standard has been set, there is an expectation among the audience it will continue to be met. Appropriate hardware, software and technical support needs to be budgeted for over the long term.

## Demonstration labs

Public tours of research facilities are an interactive way for consumers to learn more about the science behind agricultural and food biotechnology. By providing access to laboratories or greenhouses, consumers can not only watch techniques of biotechnology being performed, but get some hands-on experience with these techniques. The Saskatchewan Agricultural Biotechnology Information Centre lab run by Ag-West Biotech on the University of Saskatchewan campus, in Saskatoon, Canada, offers public tours of a demonstration lab. The tour includes experiments for people to try, presentations, demonstrations, interactive displays and computer simulations. Staff scientists and graduate students are available to answer questions.

## Public debates

# 4) Evaluation

## *The evaluation process*

The process of evaluating a program's planning, implementation and impact is considered "evaluation research." The basic questions to be answered in the evaluation process include:

*Conceptualization and design*
What is the extent and distribution of the target problem and/or population?

Is the program designed in conformity with intended goals; is there a coherent rationale underlying it; and have chances of successful delivery been maximized?
What are projected or existing costs and what is their relation to benefits and effectiveness?

*Implementation*
Is the program reaching the specified target population or target area?
Are the intervention efforts being conducted as specified in the program design?

*Utility – impact and efficiency*
Can the results of the program be explained by some alternative process beyond the scope of the program?
Is the program having some effects that were not intended?
What are the costs to deliver services and benefits to program participants?
Is the program an efficient use of resources, compared with alternative uses of the resources?

Evaluation research is used to learn what happened and why, not to "prove" things. Too often, evaluation is designed to "prove" or "do" something, not to learn and thus advance the effectiveness of programs. A sample evaluation model follows.

Evaluation model

| Activity | What you are measuring? | Examples | Methodologies |
|---|---|---|---|
| Measuring your outcomes | What has changed? | ▪Attitude change<br>▪Behaviour change<br>▪Increase in understanding or awareness | By using:<br>•Quantitative research<br>•Qualitative research<br>•Direct feedback |
| Measuring your content | How effective has your content been to reaching your objective? | ▪Website content<br>▪ News articles<br>▪ Speeches<br>▪ Media release copy<br>▪ Design work | By using:<br>▪Audience feedback<br>▪Media monitoring<br>▪Measuring distribution<br>▪Phone calls<br>▪ website visits |
| Measuring your activities | How effectively have you done activities? | ▪Newsletter distribution<br>▪Media coverage<br>▪Public event held | By using:<br>•Readability studies<br>•Informal feedback<br>•Existing research<br>•Pre-testing of products |
| | | | |

## *Alternative approaches to generate social acceptance*

When a public debate on either a known or proposed technology is deadlocked, conventional techniques to communicate with the public are not sufficient. The four principles described here can help to reorient a morally charged debate back toward a more factually based one.

**The principle of behaviour-oriented relations with the public: personal communication**
It is often assumed that a lack of information inhibits the public's acceptance of a position. More often, the problem of acceptance is due to a crisis of confidence, and the information in

itself is of minor significance. More important is the perceived trustworthiness of the spokespeople. Acceptance and trust hinge on making the visible behavior (including that made visible through public relations) of those providing the information, from high-level politicians down to junior civil servants and from top managers down to the most junior staff members, consistent with a confident, reliable message.

**The principle of cooperation-oriented relations with the public: interactive communication** While the correct information can be critical in persuading or convincing people to accept a given position, people do not have an unlimited capacity for processing and understanding unlimited sources of information. Failure to appreciate this point means that often more information is provided than can possibly be absorbed.

Too much information induces cognitive stress: people fall back on familiar preconceptions, even on familiar misconceptions, to remain in control. They use their former frames of reference to evaluate new information. Only the facts confirmed by their opinions are regarded as reliable. Information that deviates from their perspective is considered dubious or is ignored. As a result, even as information becomes more quantitative or more plentiful, people shift away from basing their discussion on facts or on the actual argument. They may simply use the scale of a report as an adequate measure rather than the validity of its content.

A main reason that people adopt and maintain a particular opinion is that they believe others hold it too. The problem is not just quantitative, but also qualitative: we need to make ourselves understood in fields where communication is almost impossible. In particular, highly complex new technology can raise unforeseen (and perhaps unforeseeable) questions that can be answered only through interactive communications.. That is why the interactive computer media are becoming particularly important and why many non-governmental organizations (NGOs) and civil society organizations make increasing use of these techniques via the World Wide Web, using blogs and chat rooms.

**The principle of all-out relations with the public: total communication**
The public must be allowed to draw its own conclusions from the presentation of information and its own participation in the discussion. Psychologically, information activities are possible only in an atmosphere of trust. But trust is jeopardized when only one side of an argument is presented. The concept in relations with the public of "do something good and talk about it" is thus inappropriate, as, by definition, it refers only to the positive, thereby raising false expectations. The public feels it is being deceived. But there are always at least two sides to reality – positive and negative. Only if the disadvantages of adopting a product or a course of action are also accurately presented, will there be any chance of it being accepted.

**The principle of non-acceptance-oriented relations with the public: open communication** Many things in this world are accepted, although they should not be, and many things are not accepted, although they deserve to be. People evaluate facts in terms of their own values and judgments, outside the control of others. The task of honest relations with stakeholders is to clarify the facts so that the general public can consider them rationally and decide. It is not the task of public relations to anticipate the decision on the arrogant assumption that others are too stupid to see the truth. Dogmatism leads to polarization and moral crusading, but offers no rational solutions. Communications should provide information on the basis of the principles considered here. It should encourage rational

judgments, and can be said to be successful even if, after careful consideration, the outcome is not in the interest of the presenter.

The danger lies not in conflicting opinions, but in irrationality. Depriving people of their ability to reflect and make their own judgments by presenting only partial truths is dishonest, because it amounts to manipulation. The public senses this immediately. In other words, acceptance can be won only by risking its loss through open communication.

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Study Circles Resource Center, http://www.studycircles.org/en/index.aspx

# GLOSSARY

The following Web sites provide a summary of the most-commonly used terms in biotechnology

Government of Canada BioBasics:
http://www.biobasics.gc.ca/english/View.asp?x=696&mid=410

Health Canada: http://www.hc-sc.gc.ca/sr-sr/biotech/about-apropos/gloss_e.html

National Research Council of Canada (plant biotechnology): http://pbi-ibp.nrc-cnrc.gc.ca/en/media/glossary.htm

Canadian Museum of Nature: http://www.nature.ca/genome/02/022_e.cfm

# BEST PRACTICES GUIDE ANNEX A

## International Food Information Council (IFIC)

## Food Biotechnology Communication Tenets

The following tenets are suggested for any opinion leaders charged with communicating food biotechnology issues to the public:

1. The purpose for each new product of food biotechnology and its benefits must be explained clearly at the beginning of public discussion.

2. Biotechnology must be placed in context with the evolution of agricultural practices.

3. Emphasis should be placed on farmers who plant the seeds that already contain beneficial traits developed through biotechnology.

4. An accurate, rather than absolute, view of food and environmental safety determinations by regulators should be communicated for each product in each country.

5. Communications should emphasize the exhaustive research over many years that led to the introduction of each new product of food biotechnology.

6. Communications (North American context) should underscore that additional food labeling requirements are necessary when there is a significant change in the composition, nutritional value or introduction of a potential food allergen from a gene transfer.

7. Government and industry communications on food biotechnology must be consistent in order to earn consumer confidence.

8. *Consumer group activism* does not necessarily reflect *consumer attitudes*, and many consumer groups either support or do not oppose biotechnology.

9. Multinational approvals on many products of food biotechnology are the result of strong international scientific consensus.

10. It is important to stress that food biotechnology also provides important benefits in addressing hunger and food security throughout the world.

**Web sites: ific.org and ific.org/sp**

# BEST PRACTICES GUIDE ANNEX B

## *Risk Communication: Experiences from Australia*

By Dr Craig Cormick, Manager of Public Awareness, Biotechnology Australia.

**Summary**

**Risk Communication** is a science-based approach to guide communications in times of:
- High concern
- High Stress
- Emotionally charged, or
- Controversial situations

**Why consider such communication?**
- Public perceptions and opinions often determine the resolution of high concern, high stress, or emotionally charged issues.
- They have a profound impact on the success of an organization
- and the outcome of the debate

**When people are stressed, they:**
- often have difficulty hearing, understanding, and remembering information
- are distrustful of others.
- often focus more on negative than positive information.
- want to know that you care before they care what you know.

If people have a perception that risks are high they will be reluctant to embrace a new technology. Traditional communication on risks is based on explaining the science to demystify it and to reduce concern. However this is rarely effective.

Scientists prefer to only consider risks that are quantifiable or "real". The general public, however, sees many more risks, based on perception of risk.

**Risk Perception Theory:**
When people are stressed, such as when they perceive high risks from a situation, their perceptions and decisions are influenced by a wide range of factors, however technical facts are often the least important (worth less than 5%)

**A Risk** can be defined as: "A threat, that is either real or perceived, quantified or non-quantified, to something that we value.

Things are **perceived to be more risky** if they are:
- Involuntary
- Rare
- Fatal
- Unknown
- Not known to science
- Not controllable
- New

Things are **perceived to be less risky** if they are:
- Low Risk
- Voluntary
- Common
- Not fatal
- Known
- Known to science
- Controllable
- Old

## Risks versus Benefits
Risks and benefits are measured differently by the public.

Risks
- can be vague
- have risen in society
- are often perceived to be higher than actuality
- are accepted without acknowledgement of benefits
- are increased by:
  - long-term effect
  - global impact
  - irreversible

Benefits
- must be specific
- need credible evidence
- have more impact when personal or close to individual
- benefit is best accepted when acknowledging risks
- are increased by:
  - personal economic impact
  - personal needs impact

In risk communication it is estimated that one negative story equals a minimum of three positives, so more than three positive stories are needed to effectively counteract a negative claim.

## Attitudes towards science and technology
Public attitudes towards the risks or benefits of science and technology can be deeply divided.

Some feel Science and Technology will cure all our problems, from global climate change, to pollution to pandemics to fuel shortages.

Some, however, feel Science and Technology are the cause of many of our problems, from global climate change, to pollution to pandemics to fuel shortages to unemployment and rapid social change

## Trust and credibility

Research and experience clearly prove that trust is one of the most important keys to communication success. This is based upon an organization's ability to establish, maintain, and increase trust and credibility with key stakeholders, including employees, regulatory agencies, citizen groups, the public and the media

Trust is dependent on three key factors:
- perceptions of knowledge and expertise
- perceptions of openness and honesty and
- perceptions of concern and care

Defying negative stereotypes of government, industry or NGOs can be key to improving perceptions of trust and credibility.

## Societal changes that effect trust
There have been many societal changes in the last decade that have led to increased lack of trust. These include:
- Lack of trust in public institutions
- The rise of anti-globalisation and anti-multinationalism movements
- Increased democratisation of decision making
- Increased empowerment of consumers
- Public health scares and environmental disasters
- Rapid rise in the Internet as an alternative media
- Increased demand for scrutiny and consultation of government

**Managing Risk Perceptions is not about explaining the data but about reducing the outrage.**

"People don't care what you know; they want to know that you care!" – Vince Covello

## Case Study: Biotechnology 2020 Forums

Public forums have been held in cities and towns across Australia, looking at biotechnology issues and how they might impact people in the year 2020.

A panel of expert speakers that represent those for and against biotechnology applications is recruited, along with a strong moderator. Significant media coverage is also promoted.

The forums are often held in rural communities with local issues targeted, and hand-held Digivote technology is used for audience participation and accurate polling.

The majority of speakers are scientists who discuss early-stage research and development that may appear in the next 15 years, and seek community comment on the technology as well as answering questions and concerns.

## Outcomes
The Biotechnology 2020 Forums have been very successful in managing risk communications in that they enable a discussion that allows for:
- Concerned community and scientists to meet in a 'neutral zone'
- Different points of view to be put forward, but with minimal emotional interference
- The humanisation and validation of different perspectives

- Scientists to hear community concerns
- Scientists to explain their work, acknowledging concerns
- Community to test perceptions against scientific reality
- Scientists to test the ideas of their work against community perspectives

**Six Key Lessons from Risk Communications:**
- Risk situations change the rules of communications.
- Public perceptions are more important than reality.
- Risk concerns are rarely about the science and explaining the science does little to alleviate concerns.
- If you isolate the public from the development of the science it will be harder to engage them with it.
- It is very hard to influence attitudes once they are formed.
- Information does not always equal influence.

Key Sources. Writings of:
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Paul Slovic, professor of psychology at the University of Oregon.
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# BEST PRACTICES GUIDE ANNEX C

## *The Practice and Psychology of Asking Questions*

### Critical success factors

1. It is critically important to establish what information you will need to accomplish your goals.

2. It is critically important to ask questions of a sample of people that is just like the population you want to know about

3. It is critically important to ask questions of a sample of people that is large enough to adequately represent the diversity of responses in the population

4. No single method is adequate to measure or fully understand what people think or why they behave the way they do.

5. You must use multiple methods and measures to put the pieces of the puzzle together.

6. Bad surveys are worse than having no surveys at all. People often assume that that the information in a bad survey was collected scientifically and will be mislead by bad information.

7. Bad information never leads to good decisions.

8. It is critically important to understand that what is in the news doesn't necessarily represent what people think

For more information, contact:

William K. Hallman, PhD
Director, Food Policy Institute
Rutgers University
allman@aesop.rutgers.edu

Food Policy Institute
School of Environmental and Biological Sciences
Rutgers University
New Brunswick, NJ 08901-8520
(732) 932-1966 x 3103
www.foodpolicyinstitute.org

# BEST PRACTICES GUIDE ANNEX D

## *Participatory Design Approaches*

***Charrette*** refers to any collaborative session in which participants draft a solution to a policy problem. It is a meeting usually convened address a specific issue or question, within a fixed time period. Participants – typically 20 to 60 -- work cooperatively to find a fresh and innovative solution to the issue at hand, in a setting where the time limit encourages quick, open and candid discussion. While the structure of a charrette varies, depending on the issue and the participants in the group, charrettes often take place in multiple sessions in which the group divides into sub-groups. Each sub-group then presents its work to the full group as material for further deliberations. These charrettes serve as a way of quickly generating a solution while integrating the aptitudes and interests of a diverse group of people. It is commonly used as an approach for stakeholder consultation.

***Delphi Method*** is an approach involving a reliable and creative exploration of ideas for decision making. The Delphi Method is based on a structured process for collecting and distilling knowledge from a group of experts by means of a series of questionnaires interspersed with controlled opinion feedback. It can be viewed as a useful communication device among a small group of experts to facilitate the formation of a group judgement. This approach was developed in order to make discussion between experts possible without permitting a certain social interactive behavior as happens during a normal group discussion and which could hamper opinion forming. Currently, the Delphi Technique makes use of e-mail systems, with (usually widely dispersed) participants of known knowledge communities voting and ranking issues.

***Search conference*** is "a large-group task-oriented conversation" (Emery and Purser, 1999). It is "an exercise in collective problem identification, discussion, and agenda setting, and has been used for over 40 years to explore ambiguity and difference, in the interests of forwarding research and action". A search conference brings together large, diverse groups in order to discover values, purposes and projects they hold in common. Rather than use experts to answer questions, participants practise shared learning, where mutual understanding is achieved by sharing information. By inviting individuals with a stake in the purpose, a search conference enables those involved to create a desired future together and a possible place for implementation. This process is most often used at a community level in addressing local issues.

Issues of conflict and fear of dispute can be overcome by setting in place a discussion about things held in common. What is held in common then sets in place confidences to discuss what is not shared. Indeed, Search Conferences are not about consensus, but constructive engagement and conversation about the unknown, the potential, and if conditions are right, the ideal from which more practical solutions can be found. this model of dialogue is somewhat different from a consensus-based model of consultation on technological issues, similar to that used in Denmark be adopted. Such a model could be criticised for being somewhat inappropriate to more culturally and politically diverse communities. Search Conference commonly have three stages: pre-conference Planning; Conference (including an environmental scan, a focus on the systems, past, present and future, opportunities and constraints, and action plans); Aftermath (implementation and diffusion).

*Study Circles* are voluntary, self-organizing adult education groups of 5-20 people who meet three to six times to explore a subject, often a critical social issue. Each meeting commonly lasts 2-3 hours and is directed by a moderator whose role is to aid a lively but focused dialogue. Between meetings participants read materials they were given at the end of the last meeting. These materials are used as springboards for dialogue, not as authoritative conclusions. The materials are usually compiled by the sponsor or organizer of the particular study circle; but groups who want to form a study circle on a particular topic can create their own materials or get ready-to-use packs from organizations like The Study Circles Resource Center. Study Circles are followed by an Action Forum, where an action plan is created, using the information and ideas gathered in the Study Circles.

By encouraging people to formulate their own ideas about issues and to share them with others, the study circle process helps overcome people's lack of information and feelings of inadequacy in the face of complex problems.

Study circles, being small, democratic and non-expert, can be adapted to virtually any use. Civic organizations, activists, businesses, unions, churches, discussion groups and governments can all sponsor (and have sponsored) study circles to educate and activate people about social issues (McCoy, 2007)

*Consensus Conference* – This process is typically used as a technology assessment tool, ideally in the early stages of a technology's development. It is designed to consider the broad features of a technology by identifying key issues that ought to be addressed. A group of 15-18 lay citizens are selected (either through media advertising or by invitation to a randomly selected pool). This panel is ideally balanced demographically (age, gender, socio-economic attributes) . The process takes place over three weekends, the first two as preparatory weekends and the third as a public conference. The citizen panel identifies the key issues and the types of experts they need to hear from on these issues. These expert presentations are made in a public meeting with an opportunity for lay panel and public questions. The citizen panel then deliberates overnight or over the next day to arrive at their consensus conclusions and recommendations.

Deliberative processes **such as the** *Citizens' Jury* and *Scenario Workshop* have been held in India and Brazil.- A citizen jury is very similar to a consensus conference in that it involves a citizen panel convened to assess a particular issue, typically in the form of a key policy question (the "charge" to the jury). The jurors are given a forum in which to hear experts, discuss and debate the issue, and arrive at conclusions and recommendations. The charge becomes the focus of the deliberation sessions and provides the framework for the jury's final report. This process usually takes place over 3-4 days. The **Scenario Workshops (or Citizen Foresight)** A scenario workshop starts with a problem that needs a solution. The aim of the process is to create a plan for action for dealing with an identified problem. Participants are presented with a set of possible future scenarios (which have been pre-formulated) describing alternative ways of solving the problem. Workshops typically last one to several days and go through the following three phases: a Criticism phase where positive and negative aspects of each scenario are discussed; a Vision phase, with participants crafting their vision or solutions to the problem; and a Realization phase where participants create an action plan which includes identifying potential barriers to realizing their vision and how these might be overcome. Generally, there are 25-30 participants from different groups of society: lay citizens are joined by policymakers, business representatives, and technical experts.