Public Participation and the Cartagena Protocol on Biosafety

A review for DFID and GEF

Part I: The main report

January 2003

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[1] We would like to thank Nizar Mohamed, Chris Briggs, Liz Peri, Susan Pieri, Ian Scoones, Tom Wakeford and Adrian Ely for helpful comments on earlier drafts of this report, and Oliver Burch for help with its final production. We are also indebted to all those who took time to be interviewed about these issues. We are grateful to DfiD for providing financial support for this work. The views expressed are ours alone. The work contained in this report builds on insights and reflections gathered from research undertaken under three projects hosted at IDS. These are 'Biotechnology and the Policy Process: Challenges for Developing Countries', 'Globalisation and the International Governance of Modern Biotechnology' and 'Democratising Biotechnology'. Further details of each of these can be found at the IDS web site (http://www.ids.ac.uk/ids/env/biotechpubs).

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AAFC	Agriculture and Agri-Food Canada
ABIA	Brazilian Association of Food Industry
ABRASEM	Brazilian Association of Seeds Producers
ABSF	African Biotechnology Stakeholders Forum
ACAB	Advisory Committee on Agricultural Biotechnology (USA)
ACBTCA	Advisory Committee on Biotechnology and 21st Century Agriculture (USA)
ACRE	Advisory Committee on Releases to the Environment (UK)
AEBC	Agriculture and Environment Biotechnology Commission (UK)
AIBA	All India Biotech Association
ANBIO	Biosafety National Association (Brazil)
APHIS	Animal and Plant Health Inspection Service (USDA, USA)
BAZ	Biotechnology Association of Zimbabwe
BBSRC	Biotechnology and Biological Sciences Research Council (UK)
BCC	Biotechnology Cooperative Centre (Malaysia) *Or* Biosafety Consultative Council (Mexico)
BCH	Biosafety Clearing House
BCIL	Biotechnology Consortium India, Limited
BINAS	Biosafety Information Network and Advisory Service, UNIDO
BIO-EARN	East African Regional Programme and Research Netwo rk for Biotechnology, Biosafety and Biotechnology Policy Development
BTA	Biotechnology Trust Africa (Kenya)
BTZ	Biotechnology Trust of Zimbabwe
CAP	Consumers Association of Penang (Malaysia)
CBAC	Canadian Biotechnology Advisory Committee
CBD	Convention on Biological Diversity
CBI	Confidential Business Information
CCDS	Consultative Councils for Sustainable Development (Mexico)
CEC	Commission for Environmental Cooperation (Mexico)
CECCAM	Center for Research on Change in the Mexican Countryside (Mexico)
CEMD	Conservation and Environmental Management Division, MOSTE (Malaysia)
CFA	Canadian Federation of Agriculture
CFIA	Canadian Food Inspection Agency
CHM	(Biosafety) Clearing House Mechanism

CIB	Council for Biotechnology Information (Brazil)
CIBIOGEM	Inter-ministerial Commission for Biosafety and Genetically Modified Organisms (Mexico)
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	The International Centre for Maize and Wheat Improvement
CINVESTAV	Centre for Research and Advanced Studies (Mexico)
CNBA	National Committee on Agricultural Biosafety (Mexico)
CONABIO	National Commission for the Use and Knowledge of Biodiversity (Mexico)
CONACYT	National Commission for Science and Technology (Mexico)
CONAMA	National Environmental Council (Brazil)
CONTAG	National Confederation of Agriculture Workers (Brazil)
CPB	Cartagena Protocol on Biosafety / Biosafety Protocol
CSE	Centre for Science and Environment (India)
CTNBIO	National Biosafety Technical Commission (Brazil)
DBT	Department of Biotechnology (India)
DEES	Directorate of Extension and Engineering Services (Namibia)
DEFRA	Department of the Environment, Food and Rural Affairs (UK)
DfID	Department for International Development (UK)
DGIS	Directorate General for International Cooperation (Netherlands)
DIPs	Deliberative and Inclusive Policymaking Processes
EARO	Ethiopian Agricultural Research Organisation
EGM	Estonian Green Movement
EIA	Environmental Impact Assessment
EPA	Environmental Protection Authority (Ethiopia) Environmental Protection Agency (US)
ERA	Rural Alternatives Studies (Mexico)
ERMA	Environmental Risk Management Authority (New Zealand)
ESPLAR	Advisory and Research Centre (Brazil)
ESTC	Ethiopian Science and Technology Commission
ETC	Erosion, Technology and Concentration (formerly RAFI)
EU	European Union
FASE	Social Assistance and Education Federation (Brazil)
FDA	Food and Drug Administration (US)
FSEs	Farm-Scale Evaluations (UK)
GE	Genetic Engineering *or* Genetically Engineered
GEA	Environmental Studies Group (Mexico)
GEAC	Genetic Engineering Approval Committee (India)
GEF	Global Environmental Facility
GIC	Global Industry Coalition

GM	Genetically Modified
GMAC	Genetic Modification Advisory Committee (Malaysia)
GMO	Genetically Modified Organism
GTA	Gene Technology Act (Norway)
GTZ	German Agency for Technical Cooperation
HSNO	Hazardous Substances and New Organisms [Act] (New Zealand)
ICGEB	International Centre for Genetic Engineering and Biotechnology
IDEC	Consumer Defense Institute (Brazil)
IDS	Institute of Development Studies at the University of Sussex, UK
ILRI	International Livestock Research Institute
INE	National Ecology Institute (Mexico)
INESC	Socio-economic Studies Institute (Brazil)
IPM	Integrated Pest Management
IPPM	Integrated Production and Pest Management
IPRs	Intellectual Property Rights
IRIS	Interlink Rural Information Service (Kenya)
IRMA	Insect Resistant Maize for Africa Project (Kenya)
ISAAA	International Service for the Acquisition of Agri-biotech Applications
ITDG	Intermediate Technology Development Group
KABP	Kenyan Agricultural Biotechnology Platform
KARI	Kenyan Agricultural Research Institute
KEBS	Kenya Bureau of Standards
KEPHIS	Kenya Plant Health Inspection Service
LMO	Living Modified Organism
MABIC	Malaysian Biotechnology Information Centre, ISAAA (Malaysia)
MAHYCO	Maharastra Hybrid Seeds Company (India)
MAWRD	Ministry of Agriculture, Water and Rural Development (Namibia)
MEC	Monitoring-cum-Evaluation Committee (India)
MMET	Ministry of Mines, Environment and Tourism (Zimbabwe)
MoA	Ministry of Agriculture (China and Ethiopia)
MoST	Ministry of Science and Technology (China)
MOSTE	Ministry of Science, Technology and the Environment (Malaysia)
MSP	Multi-Stakeholder Process
MST	Movement of the Landless (Brazil)
NABA	Namibian Biotechnology Alliance
NABC	National Agricultural Biotechnology Council (US)
NAFTA	North America Free Trade Agreement
NAS	National Academy of Science (US)

NBAB	Norwegian Biotechnology Advisory Board
NBC	National Biosafety Committee (Kenya) Namibian Broadcasting Company
NBD	National Biotechnology Directorate, MOSTE (Malaysia)
NBF	National Biosafety Framework
NBI	National Biosafety Inspectorate (Namibia)
NBBC	National Biodiversity-Biotechnology Council (Malaysia)
NCS	National Conservation Strategy (Ethiopia)
NCST	National Council for Science and Technology (Kenya)
NERC	National Environmental Research Council (UK)
NGO	Non-Governmental Organisation
NNBP	Namibian National Biodiversity Programme
NSSD	National Strategy for Sustainable Development
OECD	Organisation for Economic Co-operation and Development
PRSP	Poverty Reduction Strategy Paper
PROFEPA	Federal Attorney for Environmental Protection (Mexico)
RASM	Risk Assessment Searching Mechanism, run by the ICGEB
RCGM	Review Committee on Genetic Manipulation (India) Royal Commission on Genetic Modification (New Zealand)
REC	Regional Environmental Centre for Central and Eastern Europe
RFSTE	Research Foundation for Science, Technology and the Environment (India)
SADC	Southern African Development Community
SAGARPA	The Agriculture Livestock and Fisheries Secretariat (Mexico)
SARB	South African Regional Biosafety Program
SEI	Stockholm Environment Institute
SEMARNAT	Environment and Natural Resources Secretariat (Mexico)
SEPA	State Environmental Protection Authority (China)
SPS	Sanitary and Phytosanitary (agreement)
TBT	Technical Barriers to Trade (agreement)
TERI	Tata Energy Research Institute (India)
TRIPs	Trade-Related Intellectual Property Rights (agreement)
UNAM	Autonomous National University of Mexico University of Namibia
UNEP	United Nations Environment Programme
UNORCA	The National Union of Autonomous Peasant Organizations (Mexico)
UK	United Kingdom
UNIDO	United Nations Industrial Development Organisation

US	United States
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WTO	World Trade Organisation
ZBC	Zimbabwe Broadcasting Corporation
ZFU	Zimbabwe Farmers Union
ZIMBAC	Zimbabwe Biotechnology Advisory Committee

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IDS

1. Executive Summary

Overview

This study looks at public participation in the development of National Biosafety Frameworks (NBFs). We make the following key observations:

- Public participation in the development of an NBF goes beyond the creation of an NBF document. It inevitably encompasses wider issues about the role of biotechnology, and requires ongoing participation in biosafety processes *after* regulations have been developed.
- Despite the fact that Parties face common challenges, there can be no universal prescription or standard formula for public participation and awareness-raising. What works in some places or in some circumstances will not work everywhere.
- Governments have two roles. The first is to initiate participatory and awareness-raising activities. The second is to create an enabling environment for *others* – civil society and business – to take the initiative.
- National biosafety processes involve development of a framework, implementation and monitoring. Currently, participatory efforts are not balanced across these stages.
- To date, much more education and awareness-raising work is being undertaken than public participation and consultation.
- There are plenty of participatory tools and approaches that have been effectively used in other policy domains, which are currently underused in biosafety processes.

Background to the study

This report summarises a study of the ways in which different countries have sought to promote and facilitate public awareness and participation in the design and implementation of their national biosafety frameworks (NBFs). The study documents and analyses the experiences of a representative selection of Parties to the Cartagena Protocol on Biosafety[2], in their efforts to fulfil their obligations

[2] Brazil, Canada, China, Denmark, Estonia, Ethiopia, India, Kenya, Malaysia, Mexico, Namibia, New Zealand, Norway, the United Kingdom, the United States and Zimbabwe. (Although the US

under Article 23 of the Protocol. The aim of this study is to assist policy-makers by identifying and assessing a range of tools and approaches that may help to promote and facilitate public awareness, education and participation concerning the safe transfer, handling and use of living modified organisms.

It is for each Party to determine which combination of tools is suitable for their purposes, and which can be realistically applied, bearing in mind the resources available to them and their previous experience with participatory processes. Since what is appropriate in one country will not necessarily work elsewhere, the tools presented here need to be adapted to the unique circumstances in the country where they are to be used.

Article 23 of the Cartagena Protocol on Biosafety

Public awareness and Participation:

1. Parties (to the Protocol) shall:

(a) Promote and facilitate public awareness, education and participation concerning the safe transfer, handling and use of living modified organisms in relation to the conservation and sustainable use of biological diversity, taking also into account risks to human health. In so doing Parties shall cooperate, as appropriate, with other states and international bodies;
(b) Endeavour to ensure that public awareness and education encompass access to information on living modified organisms identified in accordance with this Protocol that may be imported.

2. The Parties shall, in accordance with their respective laws and regulations, consult the public in the decision-making process regarding the living modified organisms and shall make the results of such decisions available to the public, while respecting confidential information in accordance with Article 21.

Key Challenges of Participation

Degrees of participation

There are different degrees of participation. These range from simple *information-sharing*, a precondition without which higher levels cannot be achieved, to *consultation*, where views are solicited but without any obligation to act on them, to *joint decision-making* and *citizen-led initiatives,* the highest levels of participation. One level does not automatically lead to the next, nor must a process encompass all steps to be valid. But it is useful to clarify, through prior reflection and continuous reappraisal by all Parties, what degree of participation is being sought and what is feasible within given constraints. While most activity

is not a Party to the Biosafety Protocol, it was decided to include it in the study because of its status as a key actor in the biosafety negotiations and the trade in LMOs.)

in the biosafety area is confined to the first two levels at the moment, there are also examples of citizen-led initiatives (see section 4.3.2).

Who creates the space for participation?

Public participation and awareness can be promoted and facilitated by many different organisations besides governments. This study includes examples of both formal and informal, 'top-down' and 'bottom-up' mechanisms of consultation, participation and awareness-raising, that have been used by different Parties. Each has its strengths and weaknesses, and each may perform different but often complementary functions. Governments therefore need not attempt to initiate or lead every participatory process themselves, but can take steps to create an encouraging and enabling environment for others to act.

The box below lays out some of the key considerations that need to be taken into account.

KEY CONSIDERATIONS ABOUT PARTICIPATION

Expectations:

- Often there is insufficient transparency on the part of convening institution(s) as to their expectations and the parameters of the process. In particular, governments should be explicit about the following: How strong a commitment can be made at the outset to incorporate inputs made by the public in consultations? Will feedback be given? Where inputs are not incorporated, will explanations be provided as to the reasons for rejecting them?
- The credibility of public participation initiatives is highly contingent on the degree of accountability and responsiveness on the part of the convening institutions. The expectations of participants in the process are therefore also critically important. Often, insufficient attention is paid to investigating interested parties' expectations and reconciling these with the expectations of convening institution(s);
- There is often a lack of clarity over who is accountable for the process and its outputs.

Timing and notice:

- Interested parties need sufficient notice in order to participate in forthcoming events or processes.
- During the consultation process, there is often insufficient time allowed for genuine consultation, learning or participatory deliberation to occur.
- Information needs to be disseminated in good time for interested parties to prepare their inputs in timely fashion, including consulting with constituencies if they are participating as representatives.

Information:

- Information sharing among participants is an important precondition for inclusion.
- Information gathering is a vital first step. In order to know what sort of information needs to be provided, in which format, and to whom, information first needs to be gathered about who the interested public is, what its concerns and interests are, and what access it has to different kinds of information or media.
- Information needs to be disseminated widely and in appropriate languages, styles and formats.
- Participants need to have access to alternative, impartial analysis, produced by actors other than the principal institution(s) involved.

Participation and Representation:

- Who participates? Who selects them, and how? Consultation and participation are usually by invitation, using criteria which are not transparent, nor devised on the basis of close knowledge of the full range of interested parties;
- It is often easiest to reach well-defined and organised groups such as NGOs or trades unions, which claim to represent particular sections of the population. But who represents whom, how, and by what means were they selected or identified?
- Special efforts may be needed in order to reach specific stakeholder groups directly. Otherwise, inclusion may be restricted to a narrow circle of participants, potentially reproducing social inequalities and limiting the participation of interested groups. Those parts of the population which are hardest to reach – the poorest, those in remote areas etc. – are rarely represented or included.

Follow-up:

- Often there is insufficient provision for follow-up activities with all parties involved;
- Feedback by the convening institutions to those consulted/participating is often insufficient or inadequate.

Key challenges of participation in biosafety regulation

Besides the general challenges associated with public participation and consultation, some *features associated with biosafety regulation* present unique and challenges for participation. These include:

- **High science:** Experience shows that citizens are certainly capable of discussing scientific issues using ordinary language and concepts. However, scientific information is often made to seem complex and forbidding to the general public. Promoting public participation therefore means finding ways to make the scientific knowledge accessible and useful to 'non-scientists'.
- **Polarized views:** Controversy over the safety and ethical implications of LMOs has tended to make the debate seem polarised. However, experience suggests that open engagement with different opinions and values helps to reveal a more complex and diverse picture of public attitudes and interests, allowing policy-makers to see ways forward.
- **Commercial confidentiality:** Because of the costs associated with the development of LMOs, biotechnology firms feel they need to keep much of the information they provide to regulators away from public scrutiny. However, secrecy about risk assessment and safety testing can breed suspicion and distrust of the regulatory system.
- **International trade laws:** The influence of WTO obligations may constrain choices in relation to biosafety regulation. The range of issues the Cartegena Protocol permits for consideration in the design and implementation of a system of biosafety regulation is limited to scientific and technical evaluations of safety and impacts on biodiversity, and socio-economic concerns where they arise from impacts on biodiversity. However, participatory exercises on biosafety have inevitably raised much wider socio-economic, ethical and moral issues regarding LMOs, and have also highlighted the social values implicit in science-based risk assessment. Processes that are unresponsive to

such public demands for a more broadly defined approach to regulation are likely to lack credibility and legitimacy.

Context matters

Appropriate forms of public participation and consultation need to reflect the different situations, capabilities, and stages of development of each country. Governments therefore have to address a range of choices at each stage of the process. The table below provides an illustrative, but not definitive, check-list of the types of choices, processes and tools available to Parties:

Choices	Processes	Tools
General (all 3 stages) • Why are you inviting people to participate? • What do citizens know, what are they concerned about?	• Clarifying the purposes of a process and how people's inputs will be used. • Engaging with areas of public concern (rather than assuming what people need to know).	• Information-gathering surveys. • Relevant, targeted information distributed in appropriate media, formats and styles. • Stakeholder forums that are accessible and widely advertised.
Development • Who should participate in the design process? • Are people enabled to participate?	• Identify key stakeholders, going beyond groups that identify themselves as stakeholders • Ensuring adequate legal frameworks (rights to information, access to decision-making) are in place. • Ensuring people are sufficiently informed about the issues to engage meaningfully with the process	• Local and regional consultations to discuss issues and solicit views. • Laws enabling public participation and access to information. • Decision trails showing how views will be carried forward, follow-up explanations about how and why inputs have or have not been used
Implementation How far to include people in decisions about: • The roles, duties and powers of responsible agencies • Mechanisms of reporting, public scrutiny and accountability. • The location and design of biosafety trials.	• Openness about applications for biosafety review and commercialisation. • Openness about the purpose, location and design of biosafety trials. • Opportunities for public comment	• Using risk analogies with which people are be more familiar. • Public registers of applications under review, with opportunities for public comment and obligations to respond to public comments.
Monitoring • How to involve people in reflection and evaluation of the adequacy of the existing NBF framework?	• Sharing and explaining findings of trials, creating feedback mechanisms and procedures for acting upon these	• Non-specialist involvement in advisory and review committees • Local level evaluations with opportunities for public comment. • Constructing mechanisms for ongoing participatory (re)evaluation of the biosafety system

A range of different factors affect the choices a country can make about processes and tools for framing, implementation and monitoring of biosafety. These include factors such as; available resources, political culture, government capacity, the nature of the legal system, and demand from civil society. In the case study countries looked at for this study, some of the following differences are evident.

In Denmark, for instance, there is a *strong tradition* of extensive participation at all levels of society, and critically there are *resources and capacity* to match this. This is reflected in the in-depth consultative activities carried out by the Danish Board of Technology. In other settings, the UK for example, there has been a *lack of trust* in official science, and so it has been important to make plenty of information available and to invite reflection on the Farm Scale Evaluations. In Brazil, exercising *legal rights* has been a key way in which civil society has attempted to widen participation in biosafety assessment. In India there has been legal engagement, but intense *media activity and NGO demonstrations* have reflected a sense that not enough has been done to engage with the concerns of a wider range of stakeholders. In Kenya and Zimbabwe, while there have been concerted attempts to engage civil society in the development of biosafety frameworks (reflecting traditions of participation in these countries), resource and capacity constraints are serious issues. In China, attempts to widen reflection on biosafety issues have occurred more within the bureaucracy than with civil society, and this is generally where tools have been applied.

Tools and mechanisms for public participation

Below, we group tools that can be used for participation and consultation and for education and awareness-raising under separate headings. In practice, however, they are intrinsically linked. Participation is impossible without information being shared effectively. Sharing information and raising awareness invites participation because it enables citizens to consider issues and form opinions on them. To understand whether these tools could help in the design of your NBF, it will help to refer to Part II of the report containing the case studies which explains the context in which they were used, and for what purpose.

Tools for Participation and Consultation

***Enabling legal frameworks*:** Laws on public participation, such as in Bolivia, or on rights to information, as in Norway, facilitate meaningful public involvement in biosafety decision-making.

Routine opportunities for public comment: In many countries, applications for regulatory approval are published in a register with opportunities for public comment as a matter of routine. Examples include Canada, the Netherlands, the United Kingdom, and the United States. In Canada, public comments on aspects

of the biosafety regulations were compiled and presented at a multi-stakeholder consultation.

Multi-level consultations: In some countries, public consultations on different aspects of the biosafety framework have taken place at local, state/regional and federal/national level. In Denmark, public hearings may be organised by local authorities for all regulatory approvals, and consultations have also been organised at neighbourhood and workplace level. In the United Kingdom, the locations of farm-scale evaluations were selected following local consultations.

On-going oversight and evaluation: Stakeholder bodies, such as the African Biotechnology Stakeholders Forum, can be set up to review biosafety procedures on an ongoing basis.

Independent advisory committees: Examples include the UK's Advisory Committee on Releases to the Environment (ACRE) and the Independent Scientific Steering Committee. The authority and credibility of such bodies depends heavily on their independence from government and industry, as well as the extent to which they include the perspectives of non-scientists and their ability to represent a broad range of stakeholders. In the United States, the Advisory Committee on Agricultural Biotechnology was effectively disbanded following the transition from the Clinton to the Bush Administrations.

Independent public enquiries: These can be independent bodies with broad mandates that produce recommendations. In New Zealand, a Royal Commission looked at the risks and benefits of the technology, broad public interest issues including human health, and the adequacy of regulatory processes. It was also able to target the particular needs of indigenous groups such as the Maori through workshops as well as convening 'youth forums' to hear the views of young people.

Bottom-up participatory processes: Participatory processes facilitated by credible and experienced NGOs can help to include stakeholders who risk being left out of government-led consultation processes. Examples include citizens' juries facilitated by NGOs such as ActionAid and ITDG in Zimbabwe, Brazil and India.

Tools for Information and Education

Surveys of communication needs: In Estonia and New Zealand, benchmark surveys of a representative cross-section of the population were undertaken to assist the government in the development of a public information campaign.

Communicating about science and risk: Using analogies to risks people are already familiar with provides one way of addressing this. Communicating risk is also improved by asking groups what they want to know rather than presuming what they need to know. Science communication is also enhanced by being

honest about areas of uncertainty (see box 5). The UK government has taken a lead in seeking to address some of these challenges.

Information dissemination: Leaflets, websites, advertising and telephone helplines can be used to explain the regulatory process and how people can be involved in decisions. Information can be disseminated more widely and effectively if it is translated into local languages, distributed widely and free of charge. Establishing councils, bureaus and networks to communicate with the public, as in Brazil, Poland and Canada, can be effective, but to be credible these bodies need to be independent. Kenya's Interlink Rural Information Service and The Biotechnology Trust of Zimbabwe also play important roles in disseminating biosafety information to rural areas, raising awareness and facilitating debate.

Using the media**:** Newspapers, radio and TV provide useful routes for informing the public about biotechnology, biosafety regulations, applications for regulatory approval, and opportunities for public comment and participation. Journalists may benefit from support and training on biosafety issues, as has taken place in Kenya and elsewhere. However, the information provided to journalists will lack credibility if it is perceived to be biased or too closely associated with the opinions of interested parties such as industry groups or NGOs. Openness and cooperation with journalists is likely to improve the quality, accuracy and usefulness of the information presented to the public.

Awareness-raising about participation: Advertising events and meetings in local media is key to this. Making the public aware of forthcoming government meetings is also important to encourage people to submit comments. In Brazil, for example, although meetings of the National Technical Commission for Biosafety (CTNBIO) take place behind closed doors, agendas for the meetings are posted on the web site before the meetings, so that groups can raise issues before the meeting.

Reflections and lessons for the future

The study which this report summarises has drawn attention to four key observations:

Firstly, there is an imbalance in most countries' approaches to their Article 23 obligations, in favour of fairly basic public education and awareness-raising exercises rather than the more challenging and fundamental process of enabling effective public consultation and participation.

Secondly, the range of mechanisms and processes being applied by different countries to date is rather limited. There is significant scope for countries to make more creative and extensive use of the many innovative and effective tools that exist for enabling public participation and education.

Thirdly, we found few examples in which public participation was being effectively promoted across all three stages of the design and adoption of an

NBF (development, implementation and monitoring). Although we found examples of public participation at each of the three stages in different countries, it is rare to find a country in which citizens are pro-actively included in all three. This is particularly true if only formal or government-sponsored processes are considered.

Fourthly, we observed that the credibility, legitimacy and effectiveness of any process or initiative depended strongly on the extent to which it enabled the public participants and key stakeholders to help frame the issues to be considered. Broad, open-ended, dynamic and responsive processes were better able to accommodate the range of concerns which citizens had. Inevitably, these included moral, ethical and social issues because biosafety risks cannot be assessed separately from social evaluations of the potential benefits of LMOs. Processes that succeeded in accommodating this diversity were more likely to command public credibility and respect.

2. Purpose and objectives of this study

The goal of this study is to provide an assessment of the attempts made by Parties to the Cartagena Protocol on Biosafety to involve key public and private stakeholders in the design and implementation of their national biosafety frameworks (NBFs). Our aim is to assist policy-makers in identifying tools that may help them to meet their obligations by drawing on the experiences of a diverse range of countries that are party to the Cartagena Protocol on Biosafety.

Our approach has been to identify useful lessons that Parties can learn from one another about *what works, when* and *why* in the application of different strategies and tools to encourage popular participation in the design and implementation of NBFs. It is not prescriptive, therefore, but aims to provide a toolkit for policy-makers faced with similar challenges that may help to usefully inform their implementation of Article 23 of the Protocol.

The degree of public participation considered necessary, practicable and desirable, and the ways in which this should be pursued, is of course a decision for national governments. That decision has to reflect the requirements and needs peculiar to each society. Nevertheless, faced with similar challenges, there is much that Parties can learn from one another about the role of participation and consultation and education and awareness-raising in the design of their NBFs.

The report covers both formal attempts by governments to solicit the views and expertise of key public stakeholders as well as more informal participatory exercises and events that have been organised by governments and other organizations to gather the views of particular groups of citizens. Both approaches have a role to play in encouraging the informed participation of different groups in the design and implementation of NBFs.

The report focuses on a range of countries that represent both a diversity of experiences with participation in the design of national biosafety frameworks and provide a geographical spread. This is important both for assessing what works,

when, why and *for whom?* as what is possible and realistic for one Party will not necessarily be so for others.

Parts I and II of this report need to be read together, as the challenges and lessons that are highlighted in this report draw on the case study material that is compiled in part II of the report. To understand the context in which a particular tool or strategy was employed and to learn more about its impact, you will need to refer to the country case studies in part II.

3. Policy obligations under the Protocol

The overall aim of the Protocol on Biosafety to the Convention on Biological Diversity is to ensure that countries receiving, exporting and using LMOs have the opportunity and capacity to assess possible risks to the environment (taking into account risks to human health) posed by the products of modern biotechnology. Apart from a regulatory framework, an administrative structure and risk assessment methodologies, mechanisms of access to information and public participation form an integral part of most biosafety frameworks.

There is increasing precedent for all Multilateral Environmental Agreements to contain provisions regarding public participation and the responsibility of governments to engage in awareness-raising activities (see section 3.1 below). The Cartagena Protocol on Biosafety is no exception (see Box 1). The emphasis on participation and consultation is premised on the idea that the involvement of all stakeholders is critical to the effectiveness of any regulatory framework. It is also acknowledged that without higher levels of public consent or consensus than exist at present, decisions to allow the commercial growing of GM crops might provide a precarious basis for proceeding with GM crop development. At a more fundamental level, it is also possible to argue that people have a right to be informed about and consulted about decisions that have a direct impact upon their lives, in this case through the food they eat.

Box 1 – Article 23 of the Cartagena Protocol on Biosafety

1. Parties (to the Protocol) shall:

(c) Promote and facilitate public awareness, education and participation concerning the safe transfer, handling and use of living modified organisms in relation to the conservation and sustainable use of biological diversity, taking also into account risks to human health. In so doing Parties shall cooperate, as appropriate, with other states and international bodies;

(d) Endeavour to ensure that public awareness and education encompass access to information on living modified organisms identified in accordance with this Protocol that may be imported.

2. The Parties shall, in accordance with their respective laws and regulations, consult the public in the decision-making process regarding the living modified organisms and shall make the results of such decisions available to the public, while respecting confidential information in accordance with Article 21.

3. Each Party shall endeavour to inform its public about the means of public access to the Biosafety Clearing House.

4. The challenges of participation

While some challenges posed by the requirements of the Cartagena Protocol in respect of public awareness-raising, consultation and participation specifically relate to the nature of biosafety issues, there are other, more generic, challenges that arise from past experience with fostering participation in policy processes.

In confronting the challenge of public participation in environmental decision-making we can benefit from the experience of a rich history participatory approaches to development policy. Insights from this work are relevant to the design and implementation of NBFs under the Biosafety Protocol. Some of these insights are discussed below.

4.1 Methodological, procedural and political challenges of fostering participation in policy processes and decision-making

In recent years international agencies and governments have gained some experience in fostering public participation in policy processes in a range of sectoral and some cross-sectoral policy frameworks. These include the development of National Strategies for Sustainable Development (NSSDs) and national Poverty Reduction Strategies, both of which place strong emphasis on public participation in their design and implementation.

We draw on experiences with promoting participation in the PRSP context since 1999 and from the history of NSSDs to date, in order to identify some of the methodological, procedural and political challenges presented by public participation in national policy processes. We also draw on some relevant insights from the practice of so-called DIPs (Deliberative and Inclusive Processes) in a variety of contexts where they may help countries fulfil their obligations under Article 23.

National experiences of developing NSSDs since the Rio conference in 1992 provide important and relevant insights. The establishment of NSSDs by 2005 is one of the International Development Goals. Country ownership and broad consultation to 'open up the debate … expose issues to be addressed and build consensus' are highlighted as key for strategy formulation.[3] The principles to which the strategies should aspire, which are also relevant to the design of NBFs, include:

- Being people-centred with effective participation
- Having objectives tied to clear budgets
- Being based on comprehensive and reliable analysis

[3] Statement by the DAC High Level Meeting upon endorsement of the 'Strategies for Sustainable Development: Practical guidance for development cooperation', OECD 2001.

- Incorporating monitoring, learning and improvement
- Being country-led and nationally owned
- Having high-level government commitment to the process
- Building on existing strategies, processes and capacity
- Linking national and local levels

A recent OECD guide on NSSDs notes that while sustainable development is a universal challenge, rather like developing biosafety regimes, the practical response can only be defined nationally and locally according to different values and interests. It notes 'A standardised blue-print approach is to be avoided, being at best irrelevant and at worst counter-productive' (OECD 2001). Instead, working with existing approaches and institutional arrangements according to individual countries' needs, priorities and available resources is preferable.

Efforts have been made to develop indicators for socially sustainable development, including indicators for levels and degrees of participation. For example, within the UK sustainable development strategy, the percentage of survey respondents reporting active participation in community events and the proportion of people satisfied with opportunities to participate in decision-making, are taken as indicators of participation (DFID 2002). Although most SSD indicators are national, participation is best measured at the local level where local indicators can be developed with local people. Indicators can be used to monitor strategy development and implementation. This is important for tracking progress, changing direction when necessary and promoting accountability for decisions taken (OECD 2001:40).

The OECD guide highlights a number of lessons regarding effective participation. These are outlined in Box 2.

Box 2 – Lessons from NSSDs regarding the key elements of effective participation

- **Appropriate participatory methods** for appraising concerns, suggestions and ranking solutions
- **A proper understanding** of all those with a legitimate interest in the framework and a concrete approach to include more disenfranchised groups
- **Catalysts for participation**: NGOs and others to link national processes with the local level
- **Specific activities and events** around which to focus participation
- **A phased approach**: start modestly building on existing systems of participation and then seek to deepen participation, but do not think of design, implementation and monitoring as a linear process.
- **Adequate resources, skills and time**: Effective processes often start slowly to build trust and require early investment of skills and resources. Costs can reduce over time, but a realistic budget and secured financial resources are key.

Source: OECD (2001)

Other relevant experiences can be drawn from the PRSP process. Poverty Reduction Strategy Papers (PRSPs) are the new instrument developed by the World Bank and International Monetary Fund in 1999 under the HIPC II initiative to regulate debt relief and to channel the debt relief resources accruing to poor southern countries into poverty-reducing public actions[4]. The PRSP framework makes 'broad-based participation of civil society in the adoption and monitoring of the poverty reduction strategy' mandatory, a condition for approval of the Paper by the international financial institutions, and hence for the release of debt relief.

A synthesis of experience with participatory approaches to policy design, implementation and monitoring, conducted in 2000 to inform future PRS processes (McGee with Norton 2000; see also IDS 2000), set out *ex ante* a range of relevant lessons and potential pitfalls that those responsible for leading participatory PRS processes needed to take into account. Later, a retrospective assessment of experience with participation in PRS processes confirmed the prominence of these challenges and pitfalls and the difficulties of applying some of the lessons learnt (McGee et al 2002). Salient aspects of these, plus other challenges which were encountered in the course of developing the first participatory PRS processes, are summarized below.

4.1.1 Why participation?

Arguments in favour of public participation in policy debates often stress that participation leads to more appropriate, more broadly 'owned', and hence more effective policy. In the biosafety context an additional argument is also foregrounded by the proponents of biotechnology: that information provision and the enabling of participation are key to ensuring that biotechnologies become accepted by a sceptical and worried public. This and other usages of participatory discourse and techniques demonstrate that these are often applied, explicitly or implicitly, with a 'market-research' function, to make a potentially unpopular policy palatable to stakeholders. Those members of the public who respond to the invitation to participate, however, are probably acting from an altogether different, and possibly incompatible, motivation to do with holding more powerful actors to account and opposing particular policy changes. Those convening participatory processes or providing public information need to be aware from the outset of this likely mismatch between different parties' reasons for engaging with each other.

[4] HIPC II is the second Highly Indebted Poor Countries initiative, a multilateral debt relief agreement. For background on Poverty Reduction Strategy Papers see ODI 2000; DFID 2000; and the World Bank website www.worldbank.org/poverty

4.1.2 Who participates?

There is no single homogenous public, but multiple publics holding divergent views that need to be encompassed in a participatory exercise. The range of interests and views incorporated into the process needs to be appropriate to the issue in question, with all relevant stakeholders having the opportunity to take part on equal terms with other participants. The identification of stakeholders and analysis of their stakes is an important aspect of any participatory process[5], but it is more complex at the level of policy than in the context of projects, for which most stakeholder analysis techniques have been developed. Stakeholders tend to be more numerous and far-flung, more diverse, and their stakes harder to identify or predict. It is desirable for groups and individuals to determine for themselves what their stake is rather than have it proscribed from above. Clearly, however, those initiating a process have to decide at the outset who should be involved. There is no simple, proven method for stakeholder analysis in the formulation and implementation of policy, but it is vital that actors convening participatory processes consider carefully how stakeholders are identified and by whom; the heterogeneity of status, interests and knowledge that they bring to the process; the fact that different stakeholders will want or need to be involved at different stages in the process, and that it is probably neither desirable nor feasible for all stakeholders to be involved at all stages.

4.1.3 Who creates the space for participation? Who defines the objectives?

In issues of national policy and regulatory frameworks, there is often an expectation that government will be the body that provides information, conducts consultations or invites participation. However, spaces or opportunities for public participation can be created by other actors as well as government – where they have sufficient capacity or resources (Hemmati 2002:210)[6]. Generally speaking, decision-making authorities that choose to convene participatory processes will do so with a defined objective in mind (support for a decision-making or policy-making process). Who convenes the process clearly has implications for the definition of objectives and, in turn, the choice of methods and tools, the choice of scale and allocation of resources, and the links to wider policy processes (Holmes and Scoones 2000:37).

Who creates the space has implications for what can happen within it, and the impact it can have. A government might be expected to take up and utilize more readily the outcomes from participatory deliberation in a space that it has created itself than outputs from a space forged by an advocacy NGO or a group of critical researchers. By opening a space for participation, a government is in a

[5] See, for example, Overseas Development Administration 1995

[6] For a discussion of participation in 'invited' policy spaces versus participation in 'autonomously created' spaces see Brock, Cornwall and Gaventa 2001.

position to unilaterally set the agenda, dictate what constitutes acceptable outcomes, and establish the rules of engagement. However, there is a risk that if the agenda is framed too narrowly by the body that convenes the process, the full range of issues that concern citizens may not be encompassed. Where frameworks are perceived to be wholly government-owned, there may be less commitment from public and private stakeholders. Discontent with national processes has led stakeholders to develop their own parallel strategies. In Thailand, for example, issues raised by civil society groups were left out of the synthesis process that followed public consultations. This led many groups to refuse to participate in the National Economic and Social Development Plan and launch their own alternative plan (OECD 2001:26).

It is important to recognise that the two kinds of participatory space are not necessarily antagonistic. The best examples of participatory PRS processes (eg in Uganda) have included a mixture of spaces created by governments, and spaces created by non-governmental actors eager to influence the course of decision-making. The point is rather that a government initiating a process of information-provision or public consultation should be aware of the possibility of other kinds of space arising beyond those that it has planned and engineered; and of the responsibilities, as well as the advantages, of creating itself the spaces for participation.

4.1.4 Who frames the problem?

The framing of the problem to be discussed carries with it strong implications for the solution to be defined. Participatory processes have the potential to allow multiple forms of knowledge to enter the discussion, but there is a risk that the conventional ways in which dominant or influential players tend to think about and discuss the issue in question will constrain the deliberations within certain boundaries, rendering certain elements of a decision or policy non-negotiable or a foregone conclusion. Often, the way that multiple views are condensed and presented in a report at the end of the exercise still reflects the dominant ways of framing the issue. In other words, the diversity of opinions gathered through the consultation exercise may end up appearing as supplementary themes or divergent opinions, but remain within a conventional framework.

A report for the UK government suggests that clear objectives need to be defined for any consultation process, so as to establish why people are being asked to participate (POST 2001). In order to ensure a constructive outcome, these objectives need to be agreed by all participants, which means that participants must be involved in framing the questions to be considered. Involving stakeholders in every aspect of the design process is crucial in order to achieve the best design and the highest level of commitment to the process.

4.1.5 Identifying stakeholders

Identifying stakeholders is a complex process. It requires careful analysis and consultation among those who are involved initially to identify all who need to be part of the process and to reach a necessary balance.

In most geographical and social contexts, attempts to share information, consult or foster the participation of the public, will engage some sections of the public more easily than others. Typically in developing country contexts, those who participate, get consulted or receive information provided by government are an urban-based, educated and socially or politically well-connected minority. Countering this tendency requires a specific effort to target the non-urban, uneducated, poorly connected majority. The process for identifying and inviting participants should be transparent.

Besides the participation of stakeholders from civil society, it is important that the participatory process should also involve relevant government departments or agencies whose portfolios are implicated by the issue or may be affected by the outcomes of a participatory consultation. This helps to ensure that relevant knowledge is included in the process, that the process is credible to participants, and that the affected departments are enrolled in the process and understand its outcomes (Hemmati 2002:219). This will enhance overall government commitment to a process, rather than it being seen as a process closely associated with one ministry or department alone.

4.1.6 Stages in the process

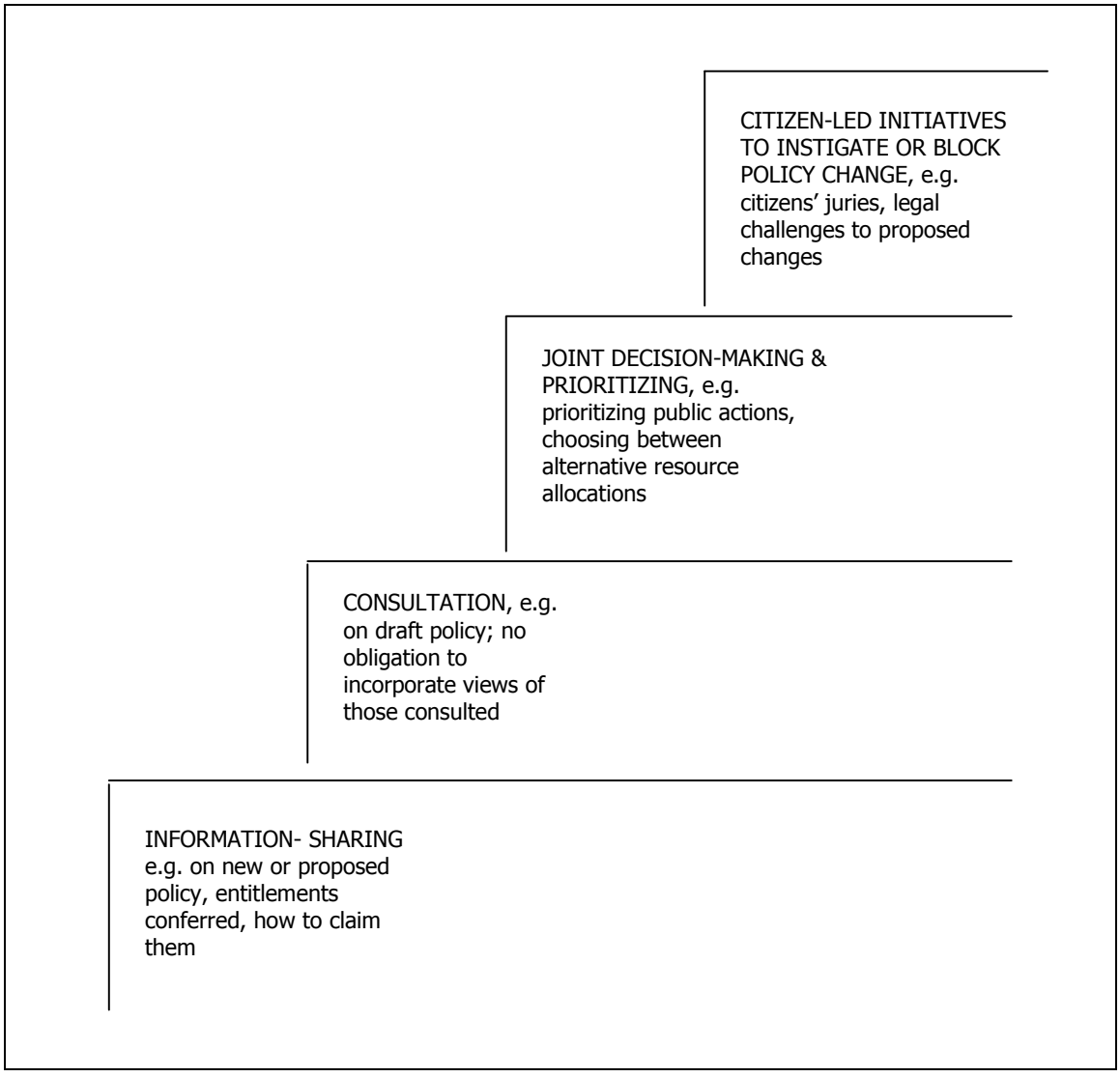
There is a temptation to treat policy like projects, distinguishing neatly between the stages of design, implementation and monitoring and evaluation. Recent literature on policy processes[7] reveals a more complex picture wherein formulation, implementation and monitoring are not discrete, bounded stages but overlap in terms of time, practices, actors involved and opportunities for influence. Those convening public participation in policy processes need to be cognizant that neatly-bounded stages are, to some extent, a convenient device for planning, rather than a true reflection of reality. Nonetheless, as a device they help to highlight the fact that different stakeholders will be more or less interested in different points of the process, and that the appropriate forms for public engagement will probably differ at each stage.

4.1.7 Levels of participation

[7] Including some very relevant material on environmental policy processes (see Keeley and Scoones 1999; Holmes & Scoones 2000) and some on poverty reduction policy processes (see McGee & Brock 2001)

The participatory development literature offers several variations on a 'ladder of participation', which separates out different degrees or intensities of participation (Arnstein 1969; Pretty 1995; Narayan 1995; Overseas Development Administration 1995). Almost all of these identify information-sharing as the lowest 'intensity' or rung, a precondition without which none of the higher intensities can happen, but which does not in itself constitute a significant degree of participation. Synthesizing key features of the various ladders and adapting them for the specific conditions of policy processes generates something like the diagram in Box 3:

Box 3 - Towards a ladder of participation in policy



The diagram serves to illustrate an important point about the necessary connection between awareness-raising and participation. Although it is helpful to draw a distinction between participation and consultation on the one hand, and education and awareness-raising activities on the other (as we do in the case studies of this report, and as is implied by the wording of Article 23 of the Protocol), they are intrinsically linked. Participation is impossible without information being shared effectively. Sharing information and raising awareness necessarily invite participation because they enable citizens to consider issues and form opinions on them. Morevover, the challenges involved in promoting public consultation and raising public awareness are also rather similar. For example, a successful *consultation* process requires a suitable process for identifying and including all the relevant stakeholders. With *education and awareness-raising* it is also necessary to identify the relevant target audience for any dissemination strategy.

There is no reason for convenors or participants to assume that one level on the ladder of participation automatically or necessarily leads to the next, nor must a process encompass the full set of steps to be valid. But a useful degree of clarity could be added to many quests for public participation in policy processes through prior reflection and continuous reappraisal by all parties as to which levels of participation they are actually seeking and which are feasible within given constraints. There is evidence, in many countries which have recently undertaken PRS processes, that the public's will to 'participate' will be considerably less in future because participants initially aspired to joint decision-making but found that convenors only shared information or, at best, consulted them (McGee et al 2002).

We know from the experience of previous planning strategies, that levels of decision-making are also important. It makes more sense to take some decisions at the national as opposed to the local level and vice versa. Consultations about the location of a proposed trial site should clearly take place within the community likely to be affected by the site, whereas discussions about the range of tests to be undertaken to assess the biosafety of a product may more appropriately be held at the national level. There is a balance to be struck here between the use of expertise for technical inputs and the need for a participatory approach, where key decisions are not left to experts alone but the public is not over-burdened by being consulted on every aspect of every decision.

4.1.8 Institutional contexts and linkages to broader policy processes

The extent to which a participatory consultation process is linked to a particular institutional context within which broader policy processes occur is very important. However there is no clearly correct way of arranging this relationship. The institutional independence of a participatory process may enhance its

credibility and legitimacy, but distance from the broader institutional policy process may make it harder to influence policy.

Participatory processes are necessarily only a part of a larger policy process. For the sake of the credibility of the process, and the willingness of stakeholders to take part, it should be made clear how the consultation exercise feeds into the broader policy process, so that participants are sure that they are not being asked merely to endorse a decision that has already been made (POST 2001). However, the institutions and processes into which the outcomes of participatory deliberation are fed need to be ready and equipped to receive and deal with it. There is a danger that the outcomes of consultation may be 'simply ignored because they are delivering the wrong type of information which cannot be accommodated by bureaucratic processes of decision-making' (Holmes and Scoones 2000:43).

In order to be effectively integrated with wider policy processes, including public debates and awareness-raising efforts, participatory processes also need to be open to non-participating stakeholders and the wider public. This means that the participatory consultation process should be transparent, accessible and well-publicised, with opportunities for those who are not directly involved to contribute comments. It is also important to recognise that stakeholders and other citizens are likely to continue to contribute directly and indirectly to the wider policy debate, using additional strategies and tactics besides their participation in a deliberation or consultation process. Indeed, some activities may be organised outside the participatory process which are clearly intended to influence its outcome.

4.1.9 Information-sharing requires information-gathering

There is a wide range of different approaches and formats available for the provision of information to the public. Not all are equally accessible to all (potential) interested parties or participants. Access to information and communication technologies (ICTs), for example, is very limited for most people in Africa and Asia. In much of rural Africa, Asia and parts of Latin America, providing information via printed media or broadcasts in the main national language will carry implicit gender, class and urban biases.

This leads us to another aspect of information whose importance sometimes gets submerged in energetic efforts to *generate*, *provide* and *communicate* facts or knowledge. Information sharing is indeed an essential and basic building block of participatory processes; but for all stages of participatory processes, including information-sharing, information-*gathering* is also needed. To some extent this is what consultation is about; yet information gathering is also relevant to all the other levels of participation. To know what sort of information needs to be

provided, in which format, and to whom, a government needs first to know who the interested public is, what its concerns and interests are, and what access it has to different kinds of information or media.

4.1.10 Representation and intermediation

Since resources for information-sharing, consultation and participation are always finite and often scarce, governments tend to rely on a cascade mechanism in which they reach out only to those who claim to be intermediaries or representatives of broader groups (NGOs; trades unions; local political figures). These representatives are often then expected to do the rest. In some cases this is unproblematic; in many, however it raises serious questions about who represents whom, how, and by what means they were selected or identified. Again, resource constraints usually preclude governments investigating too closely the validity of 'representatives'; but the general point remains that unless targeted efforts are made to extend information, consultation and participation to specific stakeholder groups, coverage will likely be patchy and will reproduce the spatial, educational, social, economic and political inequalities in a given society.

4.1.11 Resource constraints

Participatory processes may be highly resource-intensive, especially in the short term. But if better informed and more widely supported decisions are made through inclusive participation, this may reduce the political, social and economic costs in the long term. There needs to be high-level commitment to provide sufficient resources to make the process work effectively, extending to an institutional culture that values dialogue and has a clear idea of why dialogue is being sought. Organising and facilitating participatory processes also requires people with particular skills and experience who can oversee the process.

Resource limitations may lead to compromises over participatory methodologies that can easily undermine their effectiveness or legitimacy, or both. Time-scale is especially vulnerable in this respect, especially if the wider political process demands a quick decision which encourages the organisers to opt for a rapid but superficial consultation. Lack of investment can result in stakeholders walking away from dialogue, the inability to make decisions or a failure to implement the decisions reached. This can serve to increase conflict and distrust, confirm stereotyped prejudices and diminish peoples' ability and readiness to listen or collaborate in future (Hemmati 2002).

4.1.12 Transparency, openness, trust and legitimacy

Providing a clear public record of the dialogue that takes place is important to the openness and transparency that participatory processes enable (Holmes and Scoones 2000). Openness and responsiveness between government and the organisers of, or participants in, participatory exercises are important in order to avoid communication problems or break-downs in trust. Each side needs to have faith in the representativeness, honesty and openness of the processes and procedures set up by the other. For example, secrecy on the part of government or sensationalism and distortion by any one group of participants (often through resort to the media) may inhibit such an outcome. Transparency will also tend to enhance the perceived legitimacy and acceptability of the consultation process. In this respect, it is particularly important to be honest about issues such as the source of funding or other support behind the participatory exercise.

The UK Parliamentary Office of Science and Technology has suggested that participatory processes should include an evaluation element as a means of quality assessment. The evaluation needs to be tailored to the objectives sought and the methods used. As a prerequisite for any evaluation, a participatory process needs to have an agreed set of plausible indicators that help to reveal the successes and shortcomings of the process. For example, when people have been led to believe that their views will feed into government decision making, there needs to be a clear way of demonstrating how this has happened.

4.1.13 Points of procedure

Procedures need to be agreed by the participants and should be designed to ensure transparency, accountability, and inclusiveness in order to encourage commitment to the process.

Among the abundance of examples of public consultation and information-sharing in the PRS context, common procedural problems diminished the scope for good-quality interaction in the great majority of cases. What tends to go wrong with information-sharing, consultative and participatory procedures is summarized in Box 4:

Box 4 - What tends to go wrong with procedures

Expectations:
- Insufficient transparency on part of convening institution(s) as to their expectations and the parameters of the process;
- Insufficient attention to investigating interested parties' expectations and reconciling these with expectations of convening institution(s);
- Lack of clarity over who is accountable for the process and its outputs.

Timing:
- Insufficient notice given to interested parties of forthcoming events or processes;
- Insufficient time allowed for genuine consultation or participatory processes to occur.

Information:
- Not disseminated widely enough or in appropriate languages, styles or formats;
- Not disseminated in good time for interested parties to prepare their inputs in timely fashion, including consulting with constituencies if they are present as representatives;
- Not enough access to alternative, impartial analysis, produced by actors other than the principal institution(s) involved;
- Inadequate attention by convening institutions to provision of feedback to those consulted/participating on what happened to their inputs – on what basis these were / were not included.

Representation:
- Consultation and participation are usually by invitation, using criteria which are not transparent nor devised on the basis of close knowledge of the full range of interested parties;
- Those parts of the population which are hardest to reach – the poorest, furthest from capital city etc – are rarely represented.

Follow-up:
- Insufficient provision made for conducting follow-up with all parties involved;
- Failure to take into account likelihood of changes in government etc which could threaten the sustainability of the process.

Source: Adapted from McGee with Norton 2000, p 64

4.1.14 Public scepticism

The legitimacy of the participatory consultation process, and the willingness of participants to engage with similar exercises in the future, will be adversely affected by a perception that public participation has not made a significant difference. Experience from many countries' PRS processes suggests that the general public and their representatives are less willing to engage with policy processes now than initially, because they perceive that their inputs, made primarily through consultations, have made little or no difference to outcomes (McGee et al 2002:23, 25; Hemmati 2002:20-21). We note in the Ethiopia case study that debt relief was granted before the PRSP process was complete,

leading people to question the value of their commitment to the process and raising scepticism about future such engagements.

As governments and international agencies gear up to promote participation in this new arena of establishment and monitoring of biosafety regulations, they would do well to analyse the scope for frustrated expectations among the public and to address in advance questions of accountability to participating members of the public. For example, how strong a commitment can be made at the outset to incorporate inputs made by the public in consultations? Will feedback be given? Where inputs are not incorporated, will explanations be provided as to the criteria for rejecting them?

In summary, the challenges of fostering public participation in policy processes are many. Whether lessons from past experience in other sectors will be taken up and applied in the context of national biosafety regulation depends in large part on the degree of commitment among Parties to the Cartagena Protocol, in particular how committed they are to *enabling participation*, as opposed to only *providing information*.

Perhaps the single most important lesson from the existing examples of participatory policy processes in areas like PRSPs and NSSDs is that the gaps in experience and capacity among all parties (the public, organized civil society, governments, bilateral and multilateral donor agencies, international institutions) were underestimated from the outset and the challenges proved, in practice, to be considerably greater than was generally anticipated. On a more positive note, the efforts that have been made in that field to narrow capacity gaps and overcome challenges such as those discussed here, provide a rich source of experience to be drawn on in the context of national biosafety regulation.

4.2 The challenges of public participation in environmental policy debates

The notion that public participation in environmental decision-making is important to policy success has been underscored in numerous international policy instruments including the Rio declaration, Principle Ten of which declares:

> 'Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level each individual shall have appropriate access to information concerning the environment … and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.'

Similarly, article 1 of the Aårhus Convention of 1998 on *Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* states that 'each party shall guarantee the rights of access to information, public participation in decision-making and access to justice in environmental matters in accordance with the provisions of this Convention'. The Convention contains provisions on access to information, access to justice and public participation in decision-making. Interestingly, while article 6 of the Convention specifies that public authorities must guarantee public participation in making decisions, activities associated with LMOs are not listed in the annex to which it applies. However, article 6.11 states that 'Each party shall, within the framework of its national law, apply to the extent feasible and appropriate, provisions of this article to decisions on whether to permit the deliberate release of genetically modified organisms into the environment'.

Besides the general acknowledgement, however, that public participation in the design and implementation of environmental accords is both desirable and key to effectiveness, there are many barriers to effective public engagement on biosafety issues. These include the following:

4.2.1 Legal literacy

A key factor which affects the impact of provisions on participation in multilateral agreements is levels of legal literacy. Enabling people to engage in discussions about what types of regulation they feel are necessary and appropriate for biotechnology assumes not only a broad comprehension of what forms of regulation are possible, but also some understanding of legal and policy issues with regard how decisions will be made, what types of evidence they may submit and what entitlements they have under law. Much of the academic work on access to justice and law and development suggests that poorer groups, in particular, find it difficult to use the legal process to their advantage, traditionally because of financial barriers as well as lack of familiarity with legal processes and language and an absence of trust in legal systems (IDS Bulletin 2001). The work of some donors in establishing legal expertise services in the biotechnology field (globally and at the national level), may make an important contribution in this regard.[8]

In so far as national biosafety frameworks may ultimately contain provisions regarding liability and redress, promoting awareness of peoples' rights and entitlements to information, disclosure and redress if they are harmed by the release of LMOs into the environment, will be key. Effective participation in decision-making presupposes public access to environmental and other

[8] For example, there is a Danish-funded project along these lines (see First Summary of donor responses on biosafety capacity building activities, UNEP-GEF).

information to enable them to participate in decisions that impact upon their lives.

4.2.2 High science

In the debate about the pros and cons of biotechnology, allegations are often made about public 'ignorance' and 'misunderstanding'. Often these 'failures' to comprehend the benefits of biotechnology are attributed to a public that is characterised as poorly informed and overly-influenced by sensationalist and inaccurate media reporting of complex scientific and technical questions. This is said to fuel emotive and irrational responses which cloud peoples' ability to comprehend the risks and benefits associated with technological developments.

Indeed, the science of biotechnology is difficult to grasp and convey in a way that is accessible to the public. Scientific information is often made to seem complex and forbidding to the general public. Nevertheless, experience shows that citizens are capable of discussing scientific issues using ordinary language and concepts. Promoting public participation therefore means finding ways to make the scientific knowledge accessible and useful to 'non-scientists'. The challenge is not to 'educate' the public in the standard sense of improving levels of scientific literacy (though clearly there is useful work to be done to equip people with the 'tools of engagement'). Rather, it is to provide people with the opportunity to engage on their own terms with issues of biosafety, to ask their own questions of the technology and what forms of regulation may be appropriate for managing the risks associated with its application.

Lasseur (2000:25) lists some strategies for addressing issues of risk perception and risk communication (see Box 5):

Box 5 – Strategies for communicating risk

- Using risk comparisons to compare familiar risks with unfamiliar ones.
- Asking groups what it is they want to know about and are most concerned about rather than presuming what people need to know.
- Being honest about areas of doubt and uncertainty, and demonstrating to the public how areas of uncertainty have been taken into account.
- Encourage experts to reflect on their own biases, assumptions and the values they bring to their work.
- Not assuming that communication will generate consensus, acceptance or reduce conflict.

4.2.3 Polarised views

Related to the above issue, is the challenge of encouraging people to engage in a debate about what provisions they might want to see for ensuring biosafety, when popular debates tend to construct the issue in terms of whether you are for the technology or against it. While it is perfectly legitimate for people to hold such positions, forcing people to identify themselves with a pro or anti stance in the way many public opinion surveys do, forecloses the opportunity to engage in a meaningful dialogue about the terms and conditions of the technologies' use, or the checks and balances that might be appropriate for safeguarding against particular social and environmental impacts.

The challenge is to establish a process which allows people the opportunity to get beyond polarised positions in the search for possible zones of consensus and agreement, without overlooking ongoing areas of conflict and disagreement. Entrenched positions regarding the adequacy and necessity of biosafety frameworks are unavoidable and conflict over the design and implementation of such measures can be taken as evidence of positive public engagement. Exercises aimed at identifying areas of conflict and consensus can be helpful to governments in deciding which measures have public backing and which do not. Understanding the sources of conflict may help policy-makers to assess actions that can be taken to build trust, but they should also acknowledge that conflicts derived from fundamental ethical or religious objections to the technology, for example, will not be negotiated away. Reaching out to groups with particular types of concern, such as indigenous peoples, through targeted forms of consultation, as governments such as New Zealand have tried to do, is a positive way of addressing the issue. We discuss in section 4.3.2 of the report the extent to which Deliberative and Inclusive Policy-Making Processes (DIPs) may be able to contribute to a broadening and deepening of the debate by creating spaces in which genuine deliberation over particular options can take place.

4.2.4 Commercial confidentiality

A further factor which has the potential to inhibit more open and transparent forms of debate and discussion around biosafety issues is the way in which information regarding the production and release of LMOs is treated as commercially confidential. Because of the high research and development costs associated with the development of LMOs and the strong forms of legal protection such as IPRs that are often attached to their use, producers of LMOs are often keen to ensure that details of their products undergoing appraisal, review and field trials are not made public for fear of commercially sensitive information being released to competitors.

This does have implications, however, for attempts to inform broader publics about biosafety issues and to get meaningful input about the types of test they would like to see undertaken and their views on the process by which these

decisions get taken. Ultimately, biotechnology companies may also consider that public trust in many contexts is a prerequisite to market access and that higher levels of transparency in the regulatory process may increase their chances of receiving societal approval for their products.

4.2.5 International pressures and national autonomy

Another issue is the extent to which decisions regarding the nature and scope of National Biosafety Frameworks are shaped and to some extent pre-determined by the prescriptions of international accords and guidelines. There may be a tension between differences in approach at the national level, which reflect public demands for particular types of regulation and risk assessment, and the proscriptions of international trade agreements in particular that call for uniformity and universality of approach to avoid trade discriminating behaviour. Agreements such as the TBT (Technical Barriers to Trade), and SPS (Sanitary and Phytosanitary) agreements of the WTO, detail the conditions in which governments are entitled to erect human health and food safety standards towards this end. The UNEP technical guidelines, the OECD guidelines on risk assessment or the Cartagena Protocol itself play a similar role in promoting particular approaches to risk assessment. It is important to consider, therefore, how much scope is available for engaged publics to contribute to the design and implementation of NBFs which may also have to conform to global accords that embody a different set of priorities.

There is real potential for public scepticism where consultative processes about the nature and scope of biosafety regulations are set up, but where the space for governments to respond to demands and concerns that may be raised by the public is, in some cases, severely circumscribed. For example, governments' freedom to incorporate public concerns may be restricted by their obligations under WTO agreements, for example, in relation to the validity of broad socio-economic criteria or a particular use of the precautionary principle as a basis for decision-making. If people perceive governments' hands to be tied, the public have few incentives to get involved in trying to shape national biosafety frameworks.

4.3 How have these challenges been addressed to date?

The case material shows that the various strategies that Parties have adopted are not exclusive and stand-alone, but should be regarded as mutually supportive. In many ways, they rely upon one another as key components of an 'infrastructure of participation'. For example, involving different public stakeholders means keeping them informed of key decision-making processes and how they are likely to be affected. This, in turn, assumes a basic legal and constitutional framework in which people have rights of access to information

and are entitled to be involved in decisions which affect their lives. Similarly, to solicit certain types of input for the design of biosafety frameworks, it makes sense to consult with groups that identify themselves as stakeholders or interested parties, often at the national level. But if the intention is to involve a more representative cross-section of society in order to build public trust in a regulatory system and to identify concerns and incorporate issues of concern to society as a whole, then other exercises and approaches become more pertinent.

In this section, we focus on the formal legal and political infrastructure which is necessary to create spaces for participation and the enabling tools for active engagement. As we have seen above, the provision of information and the raising of awareness is an essential prerequisite for effective participation and consultation. Therefore, we highlight a number of tools and mechanisms that might be used to disseminate information and raise awareness. In the next section, we move beyond these foundational mechanisms of information and awareness-raising to discuss alternative processes for creating dialogue and broadening the circle of political participation in decision-making on biosafety issues.

Table 1 sets out the two kinds of approach, formal and informal, and further divides approaches according to whether they are initiated by action from above, i.e. by governments, or action from below, i.e. by concerned citizens.

	FORMAL	**INFORMAL**
FROM ABOVE	Obligations on government to consult with the public	Government-initiated Deliberative and Inclusionary Processes (DIPs)
FROM BELOW	Citizen rights to information and participation	Citizen-initiated DIPs

Table 1 - Formal and informal processes

4.3.1 Formal rights to information and participation

The promotion and facilitation of public awareness and participation need not depend solely on the initiative or goodwill of governments. A supportive constitutional or legal framework which enshrines citizens' entitlements to have

access to information and be consulted about decisions or policies can create a space for interested citizens and stakeholders to participate.

Despite increasing emphasis on the importance of participation in environmental policy, there is no mandatory requirement for public participation emanating from bodies of international law, such that countries enjoy a large degree of discretion in how they choose to establish procedures for public participation. Some countries have a law of public participation, such as in Bolivia. Within the EU, however, directives on LMOs leave it up to individual member states whether or not to consult the public on any aspect of the proposed use. Many countries, have encouraged the submission of oral and written comments from the public on specific decisions, plans, programmes or policies. The extent to which points raised by the public are registered, acknowledged or acted upon depends on the political will and capacity of governments to do so.

Some countries require public hearings before decisions are taken on the deliberate release of LMOs (and some other high risk applications). In Austria, only those members of the public that have given reasoned objections to an application are invited to a hearing, but public authorities are then obliged to take the results of the hearing into account. In other countries, such as Belgium, the municipality in which an installation for contained use is to be built only has to carry out a public consultation if it is deemed necessary.

In countries such as the UK, Brazil and India the courts have been a key site for contesting the effectiveness of biosafety regulations, where activists have challenged the transparency and legality of decisions made about field trial sites for testing the safety of LMOs (see India case study). Where non-implementation of biosafety regulations results in loss to an individual (farmer's) income, we are also witnessing the use of courts as a vehicle to seek compensation for crops damaged by cross-pollination from sites where LMOs are being tested and grown (Newell and Glover, forthcoming). It is to be expected then that the law will continue to be an important tool for the evaluation of the effectiveness of biosafety regulations and will be used, often as a last resort, by those who feel their concerns have been marginalised by government decision-making processes.

While legal protection of the rights to information and participation is clearly important, the law can only do so much to facilitate and enable (much less promote) participation in practice. In particular, although the provisions of international instruments such as the Protocol set important precedents, implementation and enforcement of these rights has to be realised at the national level. It is important that citizens should have access to an effective system of justice which can prevent or remedy violations of their rights. However, access to legal systems is uneven. The extent to which NGOs and

other interested parties hold legal standing in court cases varies between different countries, and for many poorer groups the law is effectively a non-option as a channel for raising concerns, for the reasons explained in section 4.2.1.

Where citizens have a right to information, this can be realised in both 'passive' and 'active' modes:

- **The 'passive' right to information.** In this mode, members of the public, interested parties and sometimes public interest groups or NGOs have a right to request and receive information held by public authorities. Sometimes these rights are restricted, depending on the nature of the information requested and who is requesting it. For example, those requesting information may sometimes have to prove a legitimate legal interest in obtaining the information. In most countries legislation on access to information and public information in decision-making contains exceptions and restrictions to the freedom of access to information (Lasseur 2000:5). A key challenge for Parties to the Protocol will be balancing the demands of companies to keep commercially-sensitive information from public scrutiny with the need for transparency and respect for citizens' rights to information (see section 4.2.4 above). In some cases, minimum requirements for disclosure may be specified. For example, in the EU, the description of the LMO, the name and address of the notifier and the results of the risk assessment may not be kept confidential. In addition, the onus is on the notifier to provide a justification for confidentiality each time it is requested. Where the rights to information are not explicitly discussed in legislation regarding LMOs, they may still be provided for under existing general laws.

  An effective responsive information strategy requires clear, well-publicised mechanisms of communication so that interested parties are able to submit requests for information to the appropriate authority. It also needs a clear and sufficiently-resourced administrative framework so that authorities are equipped to respond in a timely, accurate and complete manner.

- **The 'active' obligation to disseminate information.** Such obligations are emphasised in the Aårhus Convention of 1998 on *Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* which obliges governments to collect and disseminate information to the public at large (Article 5). Rather than making it available on request, as with the passive approach, the onus is upon governments to pro-actively disseminate information and raise awareness about key environmental issues.

A pro-active information dissemination strategy requires a very different approach from the passive mode. A variety of tools and mechanisms, possibly in

combination with each other, may be appropriate. Examples might include the following:

- ***Public databases or inventories*** of information on GM products, government notifications and permits or current research and development projects, that are open to public scrutiny. For countries with good ICT infrastructure, it may be practicable to make these available over the internet. Known examples include:
  - A 'Gene Technology Book' which documents the state of science and technology [Austria].
  - A publicly accessible Gene Technology Register with information on products approved for market in the EU [Austria].
  - The annual release of key information from government bodies to the public. In Germany, for example, yearly reports from the Central Commission for Biological Safety are published and statements of the Bureau for Technology Assessment are made accessible to the public.
  - There have also been initiatives by various international bodies and private organisations to create publicly accessible databases and information gateways using the internet and other media. These are described in more detail in below.
- ***Workshops and seminars,*** targeted at particular stakeholders. For example:
  - National and sub-national *awareness-raising workshops* involving groups such as local councils, residents, consumers, farmers, industry representatives, journalists, teachers and so on.
  - *Training workshops* on biosafety and biosafety regulation, to inform regulators, inspectors, laboratory workers and company officials about risk assessment, risk management and their legal responsibilities.
- ***Printed information,*** including technical fact-sheets on biotechnology or GMOs; leaflets targeted at the general public, consumers etc.; 'use awareness' materials on biosafety precautions and risk management for biotechnology practitioners, farmers etc.; newsletters and magazines targeted in an accessible style and format.
- ***Modern information and communication technologies*** (ICTs) such as internet discussion forums and email news-groups. Where internet access is not a problem, such platforms can provide a channel for two-way communication.
- ***National and local media*** including newspapers, radio and television, which can be used to inform people about biotechnology and biosafety issues as well as to publicise new developments, meetings and events. Strategies for using the media are described in Box 6.

Box 6 - Using the media to disseminate biosafety information

- Improving the quality and accessibility of the information released to the media is important. Workshops with journalists, to identify problems and potential solutions, may help in this regard.
- Relationships with journalists may be improved if officials are helpful and cooperative with the media rather than secretive and defensive.
- Information overload does not help to get messages across. Technical information presented in tables, charts and figures may have less impact than a clear example or anecdote.
- It is more helpful to engage with public concerns and fears rather than dismiss them as ignorant or irrational.

- ***Theatre*** or other creative and performance methods may help to raise awareness and convey information in an accessible and engaging way.
- ***Informal interest groups or 'learning communities'*** may help to spread understanding of biotechnology and biosafety issues.
- ***Supporting NGOs or civil society groups*** to promote public awareness or mobilise public engagement and participation can be an effective way for governments to reach out to groups and stakeholders which they may not easily reach by themselves. NGOs often have substantial networks, including contacts at grassroots level, and in some circumstances are more trusted than government organisations. An example of a case where such an arrangement may be helpful is shown in Box 7.

Box 7 - Working with and through NGOs

Consument en Biotechnologie (Consumer and Biotechnology) [Netherlands] is a foundation set up in 1991 to enable consumer organisations to inform their grassroots support at an early stage about developments in the field of biotechnology (before they reach the market) and to mobilise them to influence policy developments when possible and appropriate. The organisation functions as a centre of expertise on biotechnology and food production, tracking developments in the area of biotechnology and judging the risks and benefits associated with them according to criteria derived from the need to protect the environment and defend consumer interests. It also takes part in, and initiates discussion and consultation among groups in society including government and industry. *Consument en Biotechnologie* also undertakes information outreach through e-mail newsletters, publications and interviews in the media. They are supported in this task by working closely with international consumer groups on biotechnology issues.

- ***Public open days and demonstration projects.*** Allowing public access to research stations and field trials may help to familiarise people with the science behind biotechnology and enable them to see for themselves what risk assessment has been conducted and what precautions are in place. With a more promotional aim in view, some companies in the private sector have organised tours for journalists and other interested parties, 'farmer field

days', as well as made use of video and internet channels to make people aware of their products (IRMA 2001).

- ***Independent information bureaus*** on LMOs may serve as a contact point for questions from members of the public. One such Bureau has been set up in Poland and aims to respond to information requests received by telephone or e-mail by providing accurate scientific information on biotechnology for the public and media. In this case the organisation was set up by European Federation of Biotechnology's Task Group on Public Perceptions of Biotechnology and is run by biotechnology students on a voluntary basis. The office also publishes a bulletin containing information on national as well as international developments in the area of modern biotechnology and food.

At the international level there have been several initiatives to make biosafety information available. These are described below:

Information on the import and export of LMOs is to be supplied by Parties to the **Biosafety Clearing House** (BCH), a key element of the Clearing House Mechanism (CHM). The CHM aims to provide a central, needs-driven, and neutral information resource to all the Parties to the CBD. Broad participation and easy access are priorities, and therefore the database of information and resources can be accessed via the internet, CD-ROMs or paper documents. The CHM provides access to the CBD's official records and key texts, case studies, national and other reports, information about relevant programmes, and a roster of government-nominated scientific and technical experts. The BCH is currently in a pilot phase. It is intended to facilitate the exchange of scientific, technical, environmental and legal information and experience relating to living modified organisms (LMOs). The secretariat of the CBD is promoting the CHM and its goals through workshops designed to address the scientific and technical information needs identified by developing countries themselves.

In addition, the website of the **International Centre for Genetic Engineering and Biotechnology** (ICGEB)[9] provides access to a range of resources and materials including:

- The Risk Assessment Searching Mechanism (RASM), a database of official and technical documents on the risk assessment of LMOs, authored by competent national authorities. The RASM is currently being piloted with a view to inclusion as a tool of the BCH. Significantly, the RASM is intended to provide electronic access to information from countries without an electronic infrastructure.
- A Biosafety Database of scientific articles on biosafety and risk assessment published since 1990.

[9] http://www.icgeb.trieste.it/~bsafesrv/

- A library providing access to official documents, national biosafety regulations, scientific findings (in the form of reports, proceedings and workshops published on the web), and key instruments such as the Rio Declaration, Agenda 21 and the 1991 UNIDO/UNEP/WHO/FAO Voluntary Code of Conduct for Biotechnology.
- An overview of concerns and potential risks associated with the environmental release of LMOs.
- Internet links to biosafety and risk assessment resources, UN and international organisations, government agencies and other web-based information sharing mechanisms and databases.

The OECD and UNIDO cooperate to provide access to online databases of biosafety information. The OECD operates **BioTrack**[10], an online searchable database of information relating to regulatory approvals for field trials and commercialisation of individual GE products in OECD member countries. UNIDO's **Biosafety Information Network and Advisory Service** (BINAS)[11] provides information about biosafety laws, regulatory authorities and field trials in UNIDO member states. The two organisations link their respective services to form **BIO-BIN**[12].

The Global Industry Coalition (GIC) has piloted a **Biosafety Information Web Portal**[13] which is intended to provide a country-by-country index of biosafety laws, guidelines and other information sources, including links to those documents that are available on the internet. It is offered as an interim tool until the BCH is fully operational. The pilot version is available on the internet and has also been distributed by CD-ROM. The GIC is also supporting the development of the Regional Biosafety Initiative.

Other facilities and services deserving mention include a number of internet-based **'Knowledge Centres'**, such as the Global Knowledge Centre on Crop Biotechnology run by the International Service for the Acquisition of Agri-Biotechnology Applications (ISAAA). The ISAAA Centre aims to (i) support national programmes on crop biotechnology by providing strategic information for decision-making; (ii) act as an information broker among stakeholders and across countries; (iii) coordinate with network nodes on the means of exchanging, packaging and distributing crop biotechnology information; (iv) synthesise and package science-based information specific to stakeholder needs; and (v) evaluate and monitor information access, availability and the impact of crop biotech information. Within the ISAAA network there are national nodes (national biotechnology information centres) designed to meet the local

[10] http://www.oecd.org/EN/home/0,,EN-home-528-nodirectorate-no-no-no-27,00.html
[11] http://binas.unido.org/binas/
[12] http://www1.oecd.org/ehs/biobin/
[13] http://www.bio.org/food&ag/biosafety/graphics/biosafetydemo1.htm

information requirements of media and concerned public. A number of what we have labelled 'Knowledge Centres' are run or supported by biotechnology firms and, understandably, seek to present a positive picture of biotechnology. The ISAAA receives funding from industry and is explicitly committed to facilitating the transfer of biotechnology applications between the private sector and developing countries.

The information accessible via these portals may be available in several different formats including HTML (web-page), Microsoft Word or Adobe Acrobat Portable Document Format (PDF). Although it is for coordinators of the site to determine what material is shared, for the most part full documents are reproduced on-line or a link is provided to the original document. The linked documents may be from official national or government databases, but they may also be unofficial transcripts and translations. Overwhelmingly, the linked documents and web-sites are in English. The accuracy and completeness of the information accessible via these portals depends on both the availability of online documents and how effectively the gateway provider manages its database. Often documents are unavailable on the web, and this is particularly true for the poorest countries. There are the added problems of links that do not work and information that appears to be missing or outdated.

These web-based databases, portals and gateways are accessible to anyone who has efficient access to the internet – including reasonably up-to-date versions of the software necessary to browse the web and download documents. However, generally speaking these resources are conceived and publicised as tools for use by policy-makers, bureaucrats and companies rather than for the public. To date, few attempts have been made to make the information more accessible to a wider audience, for example by publicising the biosafety resources more widely, or by explaining the practical implications of particular rules, using less technical language, or including glossaries of key terms. In addition, internet-based sources of information are often of little use to policy-makers and bureaucrats, let alone ordinary citizens, in countries that have a poor ICT infrastructure. In such countries, information needs to be available via appropriate technologies that may include paper documents by mail and fax or a telephone hotline as well as CD-ROM and web-based information (Lasseur 2000:22). This is quite apart from more pro-active education and dissemination strategies that may need to include broadcast and other media. Without the use of these mechanisms, there is a danger that these sources of information are much more likely to be valuable to potential exporters of LMOs than to citizens of the country concerned. Of the initiatives discussed above, only the BCH itself explicitly affirms its intention to make information available in low-tech as well as high-tech forms.

So far as we are aware, no attempt has yet been made to assess how many and what type of users are currently accessing the various portals and databases

described above. Therefore it remains unclear how effectively or how broadly they are raising public awareness or facilitating informed public engagement with national biosafety frameworks.

4.3.2 Informal Processes

As we have seen, a supportive legal framework can only achieve so much. Also, while a pro-active dissemination strategy is more likely to reach a diverse audience than a passive one, and is a necessary first step to creating a space for participation, the mere provision of information falls short of fully enabling citizens and stakeholders to participate. There remains an important role for more informal and non-legal approaches to participation. These may be easier for non-governmental organisations to promote and facilitate than for governments, which may lack appropriate networks, resources, and credibility with certain stakeholder groups.

These approaches have the potential to address some of the challenges outlined above, and could enable countries to fulfil their commitments under A.23 of the Cartagena Protocol. These methods and techniques are collectively known as 'deliberative and inclusive (or inclusionary) policy processes' (DIPs). The DIPs described below are not an obligation for governments, though governments can help resource them, support them and be involved in them. Rather, they provide for a process by which rights to be heard can be claimed, rather than being legally owned *a priori*. Not only do they have the potential to widen the circle of participation, they hold the possibility of enabling a deeper form of participation in which choices are deliberated and a level of cross-examination of expert opinion is encouraged, that would not normally feature in conventional consultative processes. The potential of these approaches is explored in the following section.

Deliberative and Inclusive Policy-Making Processes (DIPs)

DIPs are *deliberative* in that they are intended to encourage open-ended and mutually respectful dialogue between stakeholders or interested parties. In other words they aim to facilitate or enable meaningful collective deliberation among participants, rather than merely to collect information or solicit opinions out of context. DIPs must therefore be distinguished clearly from events such as hearings or public meetings where a panel of officials or experts seeks information or views and answers questions, without enabling an opportunity for collective discussion or open dialogue among the various participants. It is important to recognise that this process of dialogue or collective deliberation is central to the contribution that DIPs can make.

The aims and purposes of democratic deliberation may be conceived in different ways. At its most basic level, civic deliberation may be used to share knowledge and information in order to promote learning and understanding about an issue or problem. Some perspectives emphasise its potential as a way of achieving consensus among the participants, although perfect consensus is practically impossible. An instrumental approach would regard the deliberative exercise purely as a tool to support effective decision-making, with the intention that the consultation will lead or contribute to a specific decision, policy or legislative outcome. Other approaches emphasise conflict and regard democratic deliberation as an opportunity for different interests to be articulated and expressed openly, without the expectation that the discussion will necessarily lead to consensus, agreement or decision. Depending on how a particular consultation or decision-making exercise is constructed, these different conceptions are not necessarily mutually exclusive and in practice may overlap or be combined (Holmes and Scoones 2000:11).

If DIPs methods are regarded as an instrument to contribute to informed public debate and decision-making, they may help to achieve some or all of the following objectives:

- **Production of information or evidence** to support informed consideration of the issue or problem;
- **Consultation with stakeholders** – i.e. an opportunity for stakeholders to express their concerns and interests, and for policy-makers and decision-makers to hear these views;
- **Monitoring and oversight** of policy areas or initiatives, without specific responsibility for decision-making or implementation;
- **Devolved decision-making and implementation**, where the powers are delegated to a body of stakeholders or citizens to define problems, develop solutions and implement actions (Holmes and Scoones 2000:11).

DIPs can provide valuable insights that help both to define questions and to evaluate solutions. Deliberative and inclusive methods can therefore be used both to support effective, informed decisions and to enhance the transparency, democracy and legitimacy of decision-making processes. Advocates of DIPs methods claim that, in the face of complexity and uncertainty, they can increase public trust and confidence in regulatory processes. Nevertheless, DIPs should be regarded as a complement rather than a substitute or replacement for traditional democratic forums and decision-making processes. Conventional methods of consultation such as opinion polls, questionnaires, hearings, meetings with electoral constituents or lobby groups, and invitations for written comments can be used alongside more innovative participatory methods such as citizens' juries and internet dialogues. Indeed, an important challenge is to ensure that the use of DIPs does not lead to 'participation overload' and duplication of effort.

Participatory deliberation aims to go beyond formal and often perfunctory approaches to consultation that generally succeed in involving only conventional stakeholder groups such as academics, unions, industry and pressure groups. In order to be adequately deliberative, DIPs must provide for meaningful participation by individuals and groups from a broad and diverse range of perspectives (Holmes and Scoones 2000:9). Inclusion is therefore generally taken to mean 'popular participation' or 'multi-stakeholder participation' (Hemmati 2002; Holmes and Scoones 2000). The question of how participants are selected is therefore crucial. As discussed above, the question of representation of citizens by intermediaries and spokespeople is problematic, particularly if the representatives are affiliated to an interest group or organisation. Much depends on how effectively the 'representatives' are willing and able to balance their responsibilities to, on the one hand, faithfully represent the interests and opinions of their constituency and, on the other, flexibly and dynamically enter into dialogue with the other participants in the forum. In order for deliberation to be meaningful rather than merely symbolic there needs to be good will, good faith and mutual respect on all sides, with a willingness to encounter conflict openly rather than suppressing disagreements for the sake of forcing an artificial consensus (Holmes and Scoones 2000; Hemmati 2002).

It is also important to appreciate the risk of reproducing inequalities of power within the deliberative forum. It would be naïve to expect that the mere act of convening a stakeholder group will enable politicians, policy-makers, experts and other traditionally powerful or authoritative players to behave as, or be treated as, equals alongside traditionally marginalised groups. The role of experts or scientific expertise in a deliberative exercise is particularly critical in this respect, especially if the experts contribute in the role of advisors rather than full participants in the deliberative exercise. There is a risk that citizens may feel inhibited by the effects of power and ignorance and assume a deferential attitude towards the opinions and conclusions urged by scientists. This may be partially overcome in a situation like a citizens' jury, where there are opportunities to cross-examine and critically compare conflicting or inconsistent scientific advice. Even better is to provide opportunities for citizen stakeholders to become researchers in their own right and 'supply their own scientific facts and uncertainties' (Holmes and Scoones 2000:36). As field-level monitors of trials through training, farming groups could have a very direct input into the implementation and evaluation of a national biosafety framework.

Examples of DIPs approaches are described in Box 8.

Box 8 - Examples of DIPs methods that could be used to promote public dialogue about biotechnology and biosafety.

- **Citizens' juries:** These typically involve a small, representative group of lay participants convened to consider a particular question or issue. Over several days, the 'jury' receives, cross-questions, discusses and evaluates 'evidence' in the form of presentations made by experts. At the end, the group is invited to make recommendations and a report is drawn up to reflect the views of the jury-members, including any differences of opinion.
- **Consensus conferences:** A group of lay volunteers are selected according to socio-economic and demographic characteristics. The group receives briefings on the topic in question and meets in private to determine the questions they wish to raise, before hearing and interrogating expert witnesses on a public stage. Consensus conferences have a number of key characteristics which distinguish them from citizen juries: greater opportunity to become familiar with the technicalities of a subject; larger degree of initiative allowed to the panel, which produces and presents its own report; the public and press are admitted to the conferences and can ask their own questions.
- **Deliberative opinion polls**: A deliberative poll measures public opinion when people have had sufficient time and information to consider a particular issue. A large demographically representative group of up to several hundred people conducts a debate on the matter in question, with the opportunity to cross-examine key players. The group is polled on the issue before and after the debate, allowing changes in opinion to be measured.
- **Focus groups:** Typically these are a small group, broadly representative of the particular citizen group being consulted. Participants discuss an issue of concern, guided by a facilitator. The group is often not required to reach conclusions, but rather the contents of the discussion are studied for what they reveal about shared attitudes and understandings of an issue. Focus groups are generally convened for no more than a couple of hours and do not receive evidence from 'witnesses'.
- **Internet dialogues:** These refer to any form of interactive discussion that takes place through the internet, such as online discussion forums. Internet dialogues are increasingly being used for direct public consultation. The advantage of these dialogues is that they provide a way of collecting a large public response quickly. They also have the benefit of a rapid exchange of ideas with a complete record. The danger is that participation is self-selecting and unrepresentative and in many countries, for reasons of access, will provide only a limited means of soliciting public views. There is also less scope for group deliberation.
- **Issues forums:** Similar to standing consultative panels / citizens' panels (see below), but normally a small group that focuses on a particular issue, with regular meetings over time.
- **Multi-criteria mapping (MCM):** A methodology aimed at combining the transparency and clarity of statistical approaches with the unconstrained framing of open-ended deliberations. The topic area is selected and basic policy options defined. Participants are then interviewed individually, to develop additional policy options and define evaluative criteria. The options are scored and relative weightings are applied to the criteria. Participants then come together to discuss preliminary quantitative and qualitative analysis provided by researchers, leading to a final report.
- **Scenario workshops** or **visioning exercises:** Various types of DIPs methods can be used to allow participants to articulate their vision of the future and consider the kind of future they would like to create. Can be applied to broad strategic questions down to specific local or sectoral issues.
- **Stakeholder dialogues:** This is a generic or 'umbrella' term that can be applied to a variety of processes that bring together affected and interested parties to deliberate and negotiate on a particular issue.
- **Standing consultative panels** or **citizens' panels:** Normally a large, representative or group of citizens. A standing body can be used as a market research instrument for quantitative and qualitative research and consultation. The panel is consulted periodically and a proportion of the members are replaced at regular intervals. These can be used to sample changing opinions and attitudes about a range of issues over time. For example, the UK has a standing *Peoples' Panel* consisting of 5,000 members of the public selected at random. The panel is used to consult on key

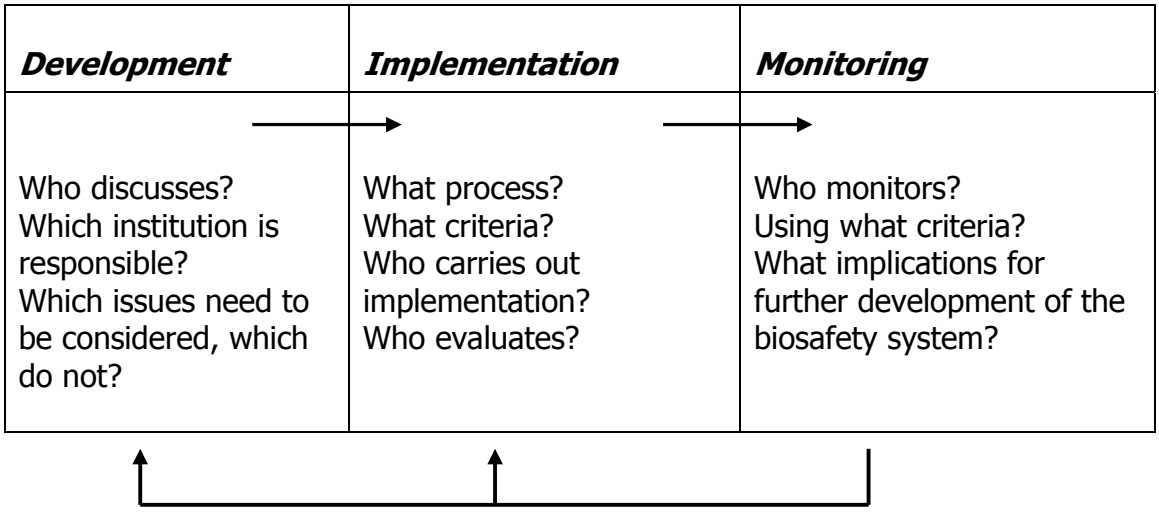
issues, track how and why views are changing and conduct surveys. For example, the panel has been used to gauge public attitudes towards the ethical implications of developments in the biosciences sector.

Sources: POST (2001); Holmes and Scoones (2000)

The family of approaches and methods discussed here should be viewed as a toolbox where different approaches may be combined or used separately to meet a specified objective. Often more than one consultation method will be necessary, depending on the policy goal and the context within which the dialogue is taking place. However, DIPs methods cannot be used effectively in isolation. They need to be deployed alongside other channels of political engagement, consultation and participation.

5. Stages of participation in the design and implementation of an NBF

The policy process for National Biosafety Frameworks can be seen as moving through several stages: development, implementation and monitoring. Each of these stages presents different challenges for stakeholder participation.



In some ways these approaches can be considered part of a cycle of feedback loops, such that questions about the scope and nature of biosafety regulation are continually revisited in the light of practice derived from implementation of procedures and trials and subsequent evaluations of their effectiveness and popular support for them.

5.1 Development of a Framework

In developing a biosafety framework it is important to consider what range of issues are relevant, who has primary institutional responsibility and what type of regulatory system is to be devised:

- How are regulations devised? Over what time period, and with what degree of stakeholder engagement? Are regulations frequently revised, allowing for lesson-learning and periods of debate and consultation?
- Which institution has responsibility for biosafety regulation? Is it housed in a new institution, in a line ministry, or an executive office, as with, for example, the Biosafety Board in the Presidents Office in Zimbabwe?
- What stages are there to be in a biosafety assessment process? One option, for example, is a three-stage process involving contained release field trials, environmental release and commercialisation. Who defines safety classes – e.g. which crops and traits need what degree of biosafety assessment?
- How far, and in what ways, are social and economic issues considered as part of biosafety?

5.2 Implementation

Implementation issues relate to the processes by which particular decisions are reached within the framework provided by a given set of regulations:

Import of LMOs

- What degree of public/stakeholder consultation is there around decisions to allow the import of particular LMOs? What procedures are there for notification and discussion of the implications of different options?

National risk assessments

- Is information about biosafety applications and crop trial locations publicly available?
- Which institutions carry out biosafety assessments? Is information provided by applicants, or are assessments made by nominated institutions, or by a specialist biosafety management institution? What range of stakeholders participate in the risk assessment process?
- Who monitors and inspects trials? What type of access do different stakeholders have?
- What debate is there about isolation distances, appropriate lengths of trials, models for assessing environmental impact?
- Are the criteria for approval or rejection of particular applications clear?
- Are decisions made public?

Biosafety monitoring after commercialisation

- After a GM crop or other GM product is commercialised, or import is allowed, what procedures are there for monitoring environmental impact, and other aspects of biosafety management?
- Who carries out monitoring? What criteria are set? Who evaluates the data?

5.3 Monitoring

Over the longer term there will need to be processes to monitor and evaluate how well biosafety regulations are working. As more becomes known about environmental, health and social impacts of GM technologies it will be necessary to ask whether risk-assessment processes in particular are adequate or need to be adjusted. Clearly stakeholder consultation and engagement in these stages will be important.

- Who determines the longer-term effectiveness of the biosafety system?

- According to what criteria is this assessment made? Who defines those criteria?
- Who is responsible for determining what changes may be necessary in the regulatory system? Will this be a strictly government decision or will there will be input from a broader range of stakeholders?
- Where the public have been involved in making recommendations and offering opinions, will there be an explanation of which options have been rejected and which taken forward and why?

The country case studies contained in part II of the report illustrate the various ways that different countries have sought to address the challenges identified in sections 4.1 and 4.2, in order to fulfil their obligations under A.23 of the Protocol. In the 'Reflections and lessons' section of each case study, we have made some observations about what we can learn from the particular circumstances and experiences of each country. In the next section, we present a brief overview of the case study material in part II and the key challenges we have discussed here in order to draw lessons about when and why processes of consultation and participation, public education and awareness-raising seem to make a positive impact, and when and why they do not.

6. Lessons for the Future

A theme we have sought to emphasise throughout this report is the importance of context to understanding 'What works, when and why?' when it comes to promoting public participation and consultation and education and awareness-raising around issues of biosafety. What works in some places is not going to work everywhere. Drawing out lessons of general relevance is therefore difficult. Applied in different countries, the same approach may yield significantly different outcomes. Nevertheless, reflecting on the range of different approaches and experiences reviewed in the case studies we make the following six observations:

1. Public participation in the development of an NBF goes beyond the creation of an NBF document. It inevitably encompasses wider issues about the role of biotechnology, and requires ongoing participation in biosafety processes *after* regulations have been developed.
2. Despite the fact that Parties face common challenges, there can be no universal prescription or standard formula for public participation and awareness-raising. What works in some places or in some circumstances will not work everywhere.
3. Governments have two roles. The first is to initiate participatory and awareness-raising activities. The second is to create an enabling environment for *others* – such as civil society groups and businesses – to take the initiative.
4. National biosafety processes involve development of a framework, implementation and monitoring. Currently, participatory efforts are not balanced across these stages.
5. To date, much more education and awareness-raising work is being undertaken than public participation and consultation.
6. There are plenty of participatory tools and approaches that have been effectively used in other policy domains, which are currently underused in biosafety processes

1. Public participation goes beyond the creation of an NBF document.

Public participation in biosafety regulation has to go beyond the creation of a National Biosafety Framework document. There are two aspects to this. The first is that public participation cannot happen in a solely instrumental way where the primary aim is the creation of a document. Constructing a National Biosafety Framework prepares a country, if it is not doing so already, to engage in the trade in LMOs. Talking about biosafety in isolation potentially excludes, therefore, a set of important prior debates about the role of biotechnology within different food and farming futures. The Norwegian consensus conference on GM foods is an example of where a wider debate was held at an early stage, leading

to a more fundamental shaping of policy. While it is clearly important that countries develop regulatory frameworks, there is a danger that participation is reduced to assessing the risks associated with biotechnology, and opportunities are lost to review the agriculture, food and technology issues more broadly. As we have emphasised previously, allowing people themselves to help frame the relevant questions for discussion strengthens the legitimacy of the process.

The second concern is that even where there is a more wide-ranging discussion about the assumptions underpinning biosafety frameworks, participation stops with the creation of a national regulatory framework. Thorough-going participation and consultation will entail ongoing attempts to engage the public in implementation of a biosafety regime and monitoring of how effectively it is meeting its aims. The debate within the UK on how to link analysis of the Farm Scale Evaluations to the public debate on biotechnology is an example of one country grappling with this challenge. The danger, highlighted by critics of the process, is that analysis of the FSEs is the preserve of risk assessment experts and not brought more fully into public debate.

2. There can be no universal formula for public consultation and awareness-raising and information sharing.

What comes across clearly from the case study material in part II of the report is that context matters. In some developing countries levels of literacy fundamentally effect the ways in which it will be effective to share information. This concern was expressed in Ethiopia, for example. Legal and political cultures vary between countries and this affects the way in which public consultation and participation can happen. In some countries there are clearly-enshrined rights to information and participation, whereas others do not have these traditions and consequently public engagement will happen in other ways. Legal literacy likewise varies between countries. The type of political system is another important factor. NGOs may be able to be active and adversarial in some places, but not in others. NGO activism has been important in widening public debate in India and Brazil for example. In other places such as China, traditions of critical civil society engagement in policy processes are weak, and government takes much tighter control over policy directions. This inevitably affects the way in which information is managed and consultation takes place. Capacity issues are also important. In many poorer countries skills and experience are limited in relation to innovative forms of participation and information-sharing. There is a need to be realistic in relation to these constraints.

3. Government should initiate processes and create an environment where others can initiate.

Information sharing and awareness raising, and participation and consultation can be government initiated 'top-down' or they can emerge from non-governmental arenas, through a more 'bottom-up' process. It is important that government takes responsibility for communicating key information in as neutral and relevant a fashion as possible, and some forms of consultation will need to be coordinated by government. However, government can also create spaces for others to undertake initiatives such as citizen's juries and participatory technology assessments as the case studies on India, Brazil and Zimbabwe illustrate.

4. Imbalance across the three stages

We found few examples in which public participation was being effectively promoted across all three stages of the design and adoption of an NBF (development, implementation and monitoring). Although we found examples of public participation at each of the three stages in different countries, it is rare to find a country in which citizens are pro-actively included in all three. This is particularly true if only formal or government-sponsored processes are considered. This is unsurprising for those countries that have yet to develop frameworks or have only recently done so. Nevertheless there are places where frameworks have been in existence for some time but there appears to have been less effort to engage the public in implementation and monitoring activities. The US approach might be highlighted in this regard.

5. More emphasis is placed on information and awareness work than participation and consultation

Article 23 obliges countries to engage in both information sharing and awareness raising activities, and consultation and participation. At present in most countries there is an imbalance in favour of information and awareness-raising activities. Clearly as we have argued throughout this report it is important to undertake information gathering work, in particular, as a precondition for participatory activities. However, there is a need to go beyond this in making more extensive and creative use of the many tools and strategies that exist for meeting the more challenging and fundamental process of enabling and enhancing public participation.

6. Many tools that might be useful are not being used

Across the case studies we have looked at, we have found evidence of a wide variety of tools and formal and informal processes being employed in relation to

biotechnology and biosafety policy. We have found less evidence of individual countries using the full range of these tools in imaginative ways to meet different policy needs. This clearly reflects context, in particular what is appropriate and practical in different settings, but there may be tools that could be used more widely across a greater number of settings than they are at present. This applies to the use of government-led processes such as the use of independent commissions or to civil society-led consensus conferences, for example.

There are also tools that are used in other domains to foster participation and information sharing that have not been used in the biotechnology field. Use of theatre and video in rural areas are examples. As biosafety processes develop more tools will come to be used, but in the meantime there could be more systematic use of what is available.

In the next section, we outline in more detail some general themes and specific examples drawn from the experiences of the case-study countries reviewed in this report, looking firstly at participation and consultation and secondly at awareness-raising and public education.

6.1 Participation and consultation

The case studies in this report illustrate that a variety of instruments have been used to promote public participation and consultation. Combinations of instruments and tools can be adapted to the resources and policy needs of different countries. But the challenge is much more profound than selecting the right tools. The extent to which they will have a positive impact in bringing people into a public debate on the design and implementation of a biosafety framework will depend on a broad range of factors such as:

- Whether the purpose of a process has been made clear, including how the views and opinions solicited will be carried forward;
- Whether governments have created a positive enabling environment for participation, such as rights to participation and rights to have access to the information necessary for meaningful participation;
- Whether effort has been made to nurture a political culture supportive of participation in which people feel able to express opinions, are comfortable about engaging in organised consultations and can be informed by an informed and free media;
- Whether decision-makers have a strong and genuine commitment to learning from and acting upon the results of consultative and participatory processes;
- The extent to which participatory processes encourage deliberation and reflection on the merits of different policy options instead of asking people whether or not they are in favour of a technology.

We have found that participatory processes that are perceived to be supply as opposed to demand-driven are less likely to be effective because they lack ownership and embeddedness in a political culture. In some countries substantial degrees of public participation around biosafety issues may reflect higher levels of demand, prevalent because there is a marked lack of trust in scientific and regulatory institutions. In the UK context, for example, we noted how a series of controversies around food and agriculture have forced a public debate not only on the issue of LMOs, but on the future of agriculture in the country. Arguably in these situations without credible engagement of stakeholders, biosafety policies will be unsustainable.

In other settings, either lack of trust may not be so marked or there may simply be no obvious way of expressing a demand for participation, which will mean that efforts in this direction are largely supply-driven. We noted in the cases of China and Ethiopia that where policy processes have been heavily controlled by the state, governments and publics may not have the appropriate tools or means of understanding what is implied by public participation and consultation. Even where spaces are created, people may not respond, unless the purposes and uses to which participatory processes will be put are explained, and trust is carefully nurtured over time.

Clearly also, the case study material shows that it has been easier for some governments to involve civil society groups than for others. It should not be expected that there will be a variety of NGOs engaging in biosafety policy in all places. In some it will be politically unwelcome, in others there will not be the capacity within civil society to get involved. In many places stakeholders cannot be clearly identified. Consumer and farmers groups in China for example are not well organised or resourced, and so have been harder to engage. One task for those interested in widening participation will be to identify appropriate ways to support civil society capacity to engage in different types of biosafety management system. The role of groups such as ActionAid, ITDG and others were highlighted during the report, but we also cautioned against overlooking the important role of conventional intermediary bodies such as extension agents.

In addition to the degree to which stakeholders are well-defined and vocal, the precise range of stakeholders has implications for the potential polarisation of debates, and effective management of a biosafety process. Some countries have a diverse and intense range of interest groups concerned about biosafety choices. There may be groups that will lose and others that will clearly gain from the introduction of LMOs (such as organic farmers, particular exporters or food processors, for instance). In the case of Namibia, for example, it was mentioned that livestock farmers tend to be wary of GMOs in animal feed, whereas there is some expectation that cotton producers might benefit from transgenic cotton seed. This inevitably affects biosafety framework processes: consensus is easier

to build in some places, whereas conflict, or attempts to undermine processes, are more likely in others.

We noted above the importance of legal frameworks in creating an enabling environment for public participation. The case studies show that clear legal rights for citizens and specific obligations on states can encourage government to be more open and responsive to different actors with an interest in biosafety policy processes. However, while these can be critical, they are not in themselves sufficient. Low levels of legal literacy and poor enforcement of laws in many countries mean that legal approaches to promoting and facilitating participation may be limited. This is not a North-South difference necessarily, as the courts have been a key site for promoting public debate about biosafety issues in countries such as India and Brazil. However, cultural and attitudinal factors are also key. It is important that government officials recognise their obligation to engage with stakeholders and publics, and respond openly to consultative processes. Publics need to feel empowered to engage with government institutions without apprehension and with the confidence that action will result from engaging in a process. The United States is a case where, despite the existence of quite sophisticated provisions for access to and publication of official information, the government has been criticised for being unwilling to respond openly to public comments and take public views into account.

Dealing with all these complex considerations certainly makes decision-making more difficult, politicised and time and resource intensive in the short term. However, ethically, strategically and politically it makes sense. The lessons from the country experiences discussed here point to the fact that engagement and public 'buy-in' is necessary for a trust-based regulatory process, whatever decisions are reached about whether, and which, LMO products are acceptable. Moreover, short term costs (in terms of money and time) have to be weighed against the significant long-term costs that could result from breakdowns of public trust, loss of confidence in regulatory bodies or the loss of legitimacy that may result either from a lack of public participation, or ill-conceived participatory processes that are not acted upon.

Examples of some of the tools and mechanisms employed by governments in the case-study countries are mentioned below. In addition, examples of more informal participatory and consultative processes around biotechnology and biosafety issues are highlighted in Box 9.

Tools for public consultation and participation

- ***Independent advisory committees*** including a range of stakeholders, often stretching to encompass environmental and consumer NGOs (as in Norway, the UK and the US prior to 2000).

- ***Independent public enquiries*** with a mandate to consider issues and receive expert testimony and public comments (as in New Zealand)
- ***Channels for routine public comments*** on LMO applications (as in Canada, Denmark, Estonia, Norway, the UK and the US)
- ***Local consultations*** involving residents living near proposed sites for contained use or environmental release of LMOs (as in Denmark, Norway and the UK)

Box 9 - Examples of consultative processes on biotechnology and biosafety contained in this report

- **Brazil:** Citizens' juries (facilitated by NGOs, trade unions and academics) in Fortaleza, Ceará, and Belem do Para, Para in 2001 and Rio de Janeiro in 2002.
- **Canada:** Calgary, Alberta Citizens Panel, 1998. The federal government was also planning a multi-stakeholder consultation on the Biosafety Protocol in September 2002.
- **Denmark:** Consensus conference, March 1999. (See Appendix 1 for more information).
- **India:** Citizens jury in Karnataka (facilitated by ActionAid India) and a scenario workshop in Andhra Pradesh (facilitated by academics and NGOs).
- **Kenya:** National 'workshop' to discuss draft biosafety guidelines.
- **Namibia:** Participatory stakeholders' workshops to draft the national policy on biotechnology and biosafety, 1998-99 (convened and coordinated by the Namibian Biotechnology Alliance).
- **Norway:** Consensus conference on GM food, 1996.
- **Zimbabwe:** Participatory 'brainstorming' workshops to discuss potential impacts of transgenic crops (facilitated by ITDG). (See Appendix 2 for more information).

Empirical examples of deliberative and consultative methods applied to biotechnology policy questions in one OECD country and two developing countries are discussed in Appendices 1 and 2.

6.2 Awareness-Raising and Public Education

A clear theme that comes through all the case studies is that information is a pre-requisite to effective participation. Therefore, the vital first step to promoting public participation must be to assess public awareness and information needs. Understanding what people know and what they want to know, in order to form opinions and make an informed judgement on biosafety issues, is key. Furthermore, information needs will differ across a society. Therefore, if widespread participation from a spectrum of social groups is the goal, this requires techniques such as surveys and workshops to understand how to target different publics with information through a range of media and in appropriate formats. In Estonia, for example, the Environment Ministry commissioned a survey which revealed that there was a substantial level of ignorance about LMOs and a desire for more information, as well as a particular interest in receiving information in the Russian language for the Russian-speaking minority.

Basic information about the processes and mechanisms that exist for soliciting public views on biosafety issues is vitally important for promoting and facilitating public participation. People need to be aware what types of information are available and how they can be accessed. This type of information would include publicising official information sources, such as government information offices, official registers and web-sites, and explaining the relevant procedures for accessing them, including contact information for responsible officials or departments. It would also need to include effective publicity for public meetings, the opening of public consultation periods, and invitations to contribute to public consultations.

Only once information needs have been assessed is it possible to proceed to the phase of targeting, providing and disseminating information. For many countries, lack of accurate and balanced, recorded information about biosafety capacity and the status of particular approvals for release remains a key problem. Some countries, as in the Namibian case, may find that they have mechanisms for collecting and storing data, but lack an effective system for analysing it and making it available. In other countries, there is a plurality of information sources, but their neutrality and independence is often questioned if the information comes from organisations that are seen to have a clear interest in presenting issues of biosafety in a particular way. Information from biotechnology companies and campaigning NGOs plays an important role in introducing different perspectives into the debate, but issues of credibility mean that governments have to take primary responsibility for establishing mechanisms for ensuring a steady flow of information that is, and is seen to be, accurate, complete and balanced.

One possible method of striking an appropriate balance may be to work with journalists and media organisations, which in principle are in a position to provide balanced coverage of biotechnology and biosafety debates. For example, in the UK, the organisers of the 'public debate' on GM food and crops hope to achieve a broad reach by entering into a partnership with the media. In other countries, such as Norway and Estonia, the government has established or commissioned independent bodies to disseminate biosafety information and promote public awareness.

Although the provision of information is a vital precondition for informed participation, information alone is not enough. More information, even better quality information, does not guarantee a more engaged public audience, nor does it necessarily create the right conditions for active citizen engagement. The information needs to be appropriately targeted for particular purposes and audiences. For example, the various international web-based biosafety databases and clearing houses discussed in this report, are better placed to provide importers and exporters with useful information about biosafety regulations in

order to facilitate the trade in LMOs, than they are to promote awareness among the general public. Information that circulates in technical databases on the internet and on CD-ROMs often serves this function. While such information sources play a useful and important part in ensuring the effectiveness of the Protocol, their design, format and the medium through which they are communicated are generally not conducive to encouraging public engagement.

Partly the issue is one of access and capacity. Most people in the world do not yet have access to the internet and cannot be expected to glean information from electronic sources. Many are also illiterate and living in areas remote from good communications networks. This situation applies to many of the cases we have looked at in developing countries in particular. The point is that it is precisely those people living in rural areas of developing countries, where testing may be taking place and where biosafety regulations are still in the process of being designed or implemented, that most urgently need relevant information and education on these issues.

While many innovative attempts have clearly been made to address some of these problems, a key challenge remains to establish which media of communication are best suited to meeting particular policy needs and in attempting to raise awareness among particular publics. To summarise, information strategies need:

- To have a definite **aim** and **purpose**
- To be **targeted** to particular groups.
- To be **accessible** to those they are seeking to reach – both in form and content.
- To be **independent** and **balanced**

Few of the governments that we have looked at in this report have made many strides in this direction. However, below, we draw attention to some of the tools that governments have made use of to date:

Information Dissemination Tools

- **Awareness-raising workshops** at national and sub-national level, and / or targeted at particular groups such as journalists (as in Estonia, Namibia and Zimbabwe)
- **Training workshops** targeted at particular groups that need to know about biosafety risk assessment, risk management and the regulatory framework (as in Estonia, Namibia and Zimbabwe)
- **Printed information** such as:
  - technical fact sheets (Scotland (UK))

    - non-technical publications in the form of leaflets, magazines and newsletters (as in Canada, Estonia, Norway and Zimbabwe)
    - editions translated into local languages (as in Estonia, Kenya and New Zealand)
- **Electronic dissemination** using web-sites, sometimes for two-way communication (as in Canada, Denmark, Estonia, New Zealand, Norway, the UK and the US).
- **Use of national and local media** and working with journalists to encourage balanced and informative coverage of biosafety issues (as in Estonia, the UK, Namibia and Norway).
- **Making use of NGOs or other intermediaries** for outreach to their networks (as in Estonia (REC-Estonia), Kenya (African Centre for Technology Studies, ACTS), Malaysia (Third World Network, TWN) and Zimbabwe (Intermediate Technology, ITDG). (In Brazil and India, among other places, NGOs were able to initiate information and awareness campaigns on their own initiative).
- **Establishing independent intermediary organisations** with a mandate to disseminate information and promote public awareness (as in Namibia (Namibian Biotechnology Alliance, NABA), Norway (Norwegian Biotechnology Advisory Board, NBAB)) and the UK (Agriculture and Environment Biotechnology Commission, AEBC / Steering Committee for the Public Debate)).
- **Public open days / information days** (as in Estonia and Ethiopia)

A Closing Remark

By way of a closing remark, we would should like to emphasise, perhaps above all else, the importance of the political will of governments in determining the degree to which the tools and strategies that we have described and contextualised in this report, make a positive impact. Beyond choices about which tools, for which purpose and at which stage of the process, the key issue is political commitment. The reports show quite clearly that where there is genuine receptivity to the experimental and flexible use of an imaginative array of tools for participation and consultation and education and awareness-raising, change can occur. Likewise, we have seen examples where lack of government commitment to a process has resulted in a breakdown of the process amid distrust and suspicions that people are being asked to endorse a policy that, in effect, has already been made.

We have repeatedly drawn attention to the importance of context to understanding which tools are likely to work in which settings. But we should not allow inevitable differences in political culture and available resources, for example, to become an excuse for inaction. These factors present challenges

that require us to think creatively about what can be done in the face of often pressing constraints, but they should not be seen as justifications for a lack of concerted effort to meet the obligations contained in Article 23 of the Protocol. Ultimately, while there are many cases of governments being criticised for not consulting widely and sincerely enough, there are no cases we have come across where a government has been accused of promoting too much public participation or of expending too much effort in public education and awareness-raising.

What governments are embarking on is a journey without a clear end and there is much reflection that has to take place along the way to ensure that we learn from oneanothers' experiences. We hope that this report has provided a starting point for that reflection.

Appendix 1

The Danish Consensus Conference on Genetically Modified Foods, March 1999

The consensus conference was intended to promote a dialogue between experts and lay people (non-experts) and to convey a picture of citizens' views to politicians. The exercise lasted three days and was open to the public. The resulting report was submitted to the *Folketing* (Parliament).

The consensus conference is regarded as being suitable for addressing reasonably discrete issues which have current social relevance, where public attitudes are unclear and contributions from experts appear to be necessary to the resolution of the public debate. The experts contribute by providing information and knowledge about the technology and its implications to a panel of citizens. Afterwards the citizens' panel drafts a final document clarifying the issue and expressing a position on it.

The panel of lay people is selected by sending out invitations to a random sample of around 1,000 adult citizens. From those who wish to participate, 14 are selected to reflect a representative mix of age, gender, education, profession and geographical spread.

The panel receives a thorough briefing on the subject consisting of information material on the topic and two weekend courses, during which the citizens get to know each other. The panel formulates the questions the conference will deal with and participates in selecting the experts who will give 'evidence'.

The three days of the conference proceed as follows:

- On Day One, the experts make presentations addressing the questions posed in advance by the lay panel. The presentations cover a diverse range of aspects on the issue, e.g. financial, biological, legal, social and ethical and perspectives.
- On Day Two, the panel and the audience questions the individual experts for elaboration and clarification of their presentation. The panel then begins drafting its final document. The first draft is then discussed and refined in smaller groups. The panel strives to find unanimous formulations.
- On Day Three the lay panel presents the final document to the experts, the audience and the media. The experts have the opportunity to challenge misunderstandings and factual errors. The final document and the written contributions of the experts are then submitted to the *Folketing*.

The Danish Board of Technology claims that consensus conferences in Denmark have stimulated public debate about technology and succeeded in making

politicians aware of public attitudes, aspirations and concerns. On several occasions such conferences have helped to initiate new regulation.

Source: Danish Board of Technology, www.tekno.dk/

Appendix 2

Participatory biotechnology policy processes in Zimbabwe and Sri Lanka

The UK-based NGO ITDG has developed a participatory methodology designed to assess the potential impacts of modern agricultural biotechnology on poor people. To date their work has focused on Sri Lanka and Zimbabwe (see above for more on the Zimbabwe work). The exercise consisted of the following elements:

- National **scoping studies** were undertaken to discover what biotechnologies were currently being applied or would potentially be applied in the countries involved, and to gain an initial understanding of the actual or potential impacts and risks associated with those technologies.
- The scoping studies were discussed in national **stakeholder workshops**
- The discussions in the stakeholder workshops were incorporated into a **communications package** for use in community-level studies.
- The communications package was used as input into community level **participatory sessions**, including **focus groups** and **brainstorming exercises**. Participants were encouraged to critically review their experiences and knowledge of the biotechnologies identified in the scoping studies, and to consider their potential impacts at community level. Brainstorming was used to enable people to assess the feasibility of risk management strategies in their own context and to identify the roles of different actors (at farmer level, local level and national level, including the private sector) in applying such risk management requirements.

The ITDG experience in Zimbabwe and Sri Lanka demonstrates the importance of carrying out preliminary but rigorous research work in order to identify what preconditions would be necessary for designing and implementing a risk assessment and risk management strategy (ITDG 2000). ITDG's ability to perform the scoping studies effectively depended on the existence of a central inventory of biotechnology work being undertaken. This resource existed in the case of Zimbabwe because of the work of the Biotechnology Trust of Zimbabwe (BTZ) but was absent in the case of Sri Lanka. Other problems inhibited the studies, including the unwillingness of some researchers to divulge details of the biotechnology work under way in their laboratories. Another complaint was that 'Virtually no information was available concerning risk assessments and risk management relating to transgenic crops and other LMOs in either Sri Lanka or Zimbabwe' (ITDG 2000:14). The lack of local literature tended to drive the discussions towards a more theoretical debate about personal preferences rather than factual assessments of local impacts. ITDG concluded that 'it would be

difficult to implement this Impact Assessment Methodology unless the lack of good information based on local empirical data is remedied' (2000:16).

A key challenge was to find ways of communicating technological and risk concepts to the stakeholders in an accessible and intelligible manner. This was especially important given that participants lacked direct experience of transgenic crops. At first, many participants were reluctant to speak because they lacked familiarity with the issues and concepts, and many found it difficult to absorb the information being conveyed to them. This underscores the benefits of organising a gradual and iterative process that enabled understanding to grow over time, rather than conducting one-off events. Effective communication relied crucially on the contributions of a multi-disciplinary team that included biotechnologists and social scientists as well as people with experience of communicating information at the local level. 'Experts' needed to be able to translate technical language into a language that is understood by and relevant to the public.

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