



**6 INF
Agenda item 7**

Chemical Safety for Sustainable Development

**IFCS/FORUM-V/6 INF
Original: English
6 September 2006**

FORUM V

**Fifth Session
of the
Intergovernmental Forum on Chemical Safety**

**Budapest, Hungary
25 - 29 September 2006**

Background Information

**Information/Discussion Session on Tools and Approaches for
Applying Precaution in the Context of Chemicals Safety**

Prepared by: J. Tickner, Consultant, and IFCS Secretariat
in consultation with the Forum Standing Committee Working Group

Introduction

An IFCS Forum V Plenary Open Information/Discussion Session has been organized to advance open dialogue and understanding about how precaution is applied in practice with regards to chemical safety to protect health and environment and implementation of goals identified in IFCS declarations and recommendations and the SAICM Overarching Policy Strategy (OPS). A Forum V Thought Starter paper presents the rationale, objectives and organization of the session.¹

Through a series of practical case examples, the session will explore tools and approaches for applying precaution in chemical safety decision-making as well as commonalities and differences in these approaches. Following these presentations, guided discussion with delegates will occur, with the goal of identifying some key commonalities and differences in approaches and providing practical next steps for the future.

To ensure adequate thinking occurs in individual countries before the start of Forum V and thoughtful discussion at the Forum, this Information Background Document is provided to delegates in advance of Forum V. This Background Document summarizes information collected on how countries domestically apply precaution in chemicals management including:

- A collection of structured information requests to governments to provide examples of tools and frameworks for how they have applied precaution in the context of domestic chemicals safety efforts.
- Interviews with selected active members in IFCS about to understand differences in how precaution is applied and some of the controversies in its application; how they are applying precaution in chemicals management including tools and approaches and the types of tools and processes that would support precautionary decision-making in the context of chemicals management.

The purpose of this structured information collection process was to collect examples of tools, approaches and frameworks for applying precaution (or making decisions in the face of uncertainty) with regards to national chemical safety efforts. The goal is to understand similarities and differences in how precautionary decisions (or decisions in circumstances of uncertainty) are made across countries; what tools and approaches countries use to apply precaution in chemicals management; how policy, regulatory and scientific processes support precautionary decision-making in the context of chemicals management; the challenges and needs for applying precaution in the context of chemicals management; and varying perceptions with its application.

This Information Background Document is presented in three sections. The first section summarizes key findings from the information collected through this scoping study. The second section provides a detailed summary of responses to the information requests and interviews. The third section contains a spreadsheet summarizing inputs from the information requests.

¹ Thought Starter: Forum V Plenary Open Information/Discussion Session On Tools And Approaches For Applying Precaution In The Context Of Chemicals Safety, Prepared By: Forum Standing Committee (IFCS/FORUM-V/01-TS http://www.who.int/ifcs/documents/forums/forum5/meet_docs/en/index.html)

I. Summary of responses

This section provides a general summary of the responses from the interviews conducted and structured information requests received.

1. Approach

Information for this Backgrounder was collected through two mechanisms:

a. Interviews with active members in IFCS. Ten semi-structured interviews of approximately 45 minutes to one hour were conducted with active members in IFCS. These interviews allowed for detailed discussion about tools and approaches for applying precaution. An interview guide was developed with support of the session Working Group. Interviewees were selected from the IFCS Forum Standing Committee and National Focal Points to represent a range of regions and stakeholders. Interviewees represented governments (6) and NGOs (4) (industry (2), public interest (1) and labor (1)) from all IFCS regions. Following each interview, interviewees were asked to review and finalize notes taken by the IFCS secretariat.

b. Structured information requests². An information request form (a survey) was developed with support of the session Working Group, translated to Spanish and French, and sent out to all IFCS national focal points, the Forum Standing Committee, and the IFCS contact database asking for responses. A total of 46 surveys were received, representing 40 governments and 6 NGOs. Of those countries submitting responses 9 were from Africa, 5 from Asia and the Pacific, 9 from Central and Eastern Europe, 8 from Latin America and the Caribbean, and 9 from Western Europe and Other Countries.

The summary of key findings and detailed summary of responses (sections II and III) integrate information from both the interviews and structured information requests. Section IV contains only tabulated information from the structured information request.

It is important to note that this information collection process is intended to be a scoping level exercise to examine the range of input from different regions and stakeholders as to the application of precaution/ decision-making under uncertainty. It is not meant to be an in-depth empirical analysis. As such no attempt is made to numerically analyze results though it is possible to examine the range of responses from different regions. Further, the process was not intended to represent a full diversity of opinions or a statistically representative sample. The depth of responses received from countries varied significantly, particularly in the structured questionnaire where some responses included detailed comments while others included mostly checked boxes.

There is clearly a range of opinions with regards to precaution and its application and while some countries explicitly refer to precaution in policy and decision-making, in others it is an implicit consideration. However, the information received through the collection process does represent a range of perspectives from different regions, countries and stakeholders.

² Structured information questionnaire responses (English, French, and Spanish) are available on Forum V web site: http://www.who.int/ifcs/documents/forums/forum5/precaution_plenary/en/index.html

2. Overview of common themes in responses³

Based on the information received from the interviews and information requests, a series of common themes emerged. Detailed responses from the information gathering process are summarized in the next section.

A. There is a wide range of processes used for applying precaution within and across countries and regions.

Precaution is applied in many ways depending on the country, region, and stakeholder group. For example, in many developed countries precaution is often applied to prevention of risks with chronic and highly uncertain health implications. In developing countries precaution is frequently applied to prevention of acute events and end of life chemicals concerns, such as pesticide poisonings, transport accidents, and chemical stockpiles. In general, there is no consistent process across countries for applying precaution in the context of chemicals safety.

Nonetheless, there is broad concurrence of opinion among the responders and interviewees as to the importance of the concept of precaution – taking preventive action in the face of uncertain risks. However, as noted below, there is some difference between developing and developed countries as to what they consider precaution. Some activities that developing countries noted as applying precaution were what some developed countries would say are routine chemicals management activities.

For many countries, particularly in the developing world, precaution is a relatively new concept; many countries noted the importance of understanding the tools and data sources needed for applying precaution. Additionally, many respondents noted that by focusing on tools and approaches for applying precaution instead of the definition of precaution and its legal status, some commonalities of tools, challenges, and needs across regions become apparent. Most of responses to the information request and interviews indicated an interest in continued dialogue and international cooperation on more detailed questions of how decision-making under uncertainty can be enhanced.

B. Precaution is most often implicit in chemicals regulation at the national level though in some cases is explicitly referenced.

While most countries noted the importance of precaution in their domestic chemicals legislation, few have established legislation or policies that explicitly call for applying precaution in chemicals management. Many countries—both developed and developing—implicitly refer to precautionary approaches in their national environmental and sustainable development policies, or in their constitutions (e.g., the right to a healthy environment). In developing countries precaution is often considered in the context of pesticides, waste, and transport policies. A few developed countries have established processes for applying precaution in their decision-making, in part to support decisions that might be subjected to trade challenges (a concern that some developed countries noted). In general, the responses indicated that precaution is currently applied on a relatively ad hoc and inconsistent basis (this was even noted by countries with policies explicitly incorporating precaution), though there may be established procedures, particularly in developed countries, for undertaking the scientific assessment process.

³ Responses to the questionnaire and interviews were not numerically tallied for this Information Backgrounder. The purpose was rather to report the general content and range of responses. In general, the term “some” and “few” indicate more than two or three similar responses; “several”, “numerous”, or “many” indicates five to ten similar responses; and “most” indicates more than half similar responses.

C. Countries have developed a variety of implicit or explicit means to implement precaution domestically.

The responses showed a wide range of tools and approaches used by countries and other stakeholders for implementing precaution either implicitly or explicitly in chemicals safety activities. While some countries noted that precaution is relevant only at the risk-management stage of decisions, others noted that there is a need for applying precaution in the risk assessment and technology assessment phases as well. Tools used in developed countries tended to be more detailed and technical (such as detailed risk assessments, modeling, and safety factors) than those used in developing countries, which focused more on impact assessment (to the degree that resources permitted), hazard identification, and communication (often through labeling). In both developed and developing countries, stakeholder engagement on national chemicals committees or in particular decision-making processes was seen as an essential part of applying precaution. Both developed and developing countries noted that scientific information is a prerequisite for taking precaution. In some regions, some commonality in approaches/tools was identified due to regional policies such as the risk assessment and risk management policies established by the European Commission. Tools identified by different countries are noted in Section II.

D. Developing countries have a strong interest in applying precaution but face substantial challenges that inhibit its application in practice.

Some developing countries noted that taking precaution is of particular importance in their countries which do not have sufficient financial and technical resources to undertake detailed risk assessments. A common set of challenges was consistently noted across developing countries. While the challenges generally affect all chemicals management activities in these countries, they are accentuated when there is scientific uncertainty; and they limit the ability of developing countries to characterize risks, identify preventive options, and ultimately support decision-making.

Some of the key challenges facing developing countries in their capacity to apply precaution include:

1. Lack of coordination nationally (for example between environment ministries and customs officers);
2. Lack of scientific and socioeconomic analysis tools;
3. Lack of support for small- and medium-sized enterprises to understand chemical risks and undertake preventive actions;
4. Lack of information/scientific resources (even in universities), including training of human resources, capacity building in toxicology, and development of laboratories and research programs;
5. Lack of resources for implementation and enforcement of precautionary policies over the short and longer terms;
6. Lack of capacity of government officials and local authorities in chemicals assessment and management;
7. Lack of legal infrastructure and authority to undertake precautionary decisions or oblige those creating risks to undertake preventive actions;
8. Lack of financial resources to conduct research, provide technical support, and invest in safer technologies. This lack of financial resources means that addressing one issue may result in short changing another;
9. Lack of public awareness and public leadership.

Many of these challenges were also reported by countries in transition, particularly those challenges related to capacity, public awareness, and resources. Several of these challenges were noted by developed

countries, particularly those related to national coordination, scientific tools and capacity (particularly for prioritization of limited resources across activities), access to information, financial resources, public awareness, and lack of local government capacity.

E. There are numerous common needs for better understanding and more effective application of precaution in chemicals management decision-making across countries and regions.

While challenges to applying precaution differed somewhat between developed and developing countries, there were some common needs. In particular information on chemical toxicity and risks, tools for decision-making under uncertainty (including socioeconomic assessment and assessment of alternative technologies), and case examples of applying precaution in practice were common needs across countries. Further, technical support to business (particularly small and medium sized companies) and local capacity were noted across countries.

Several developed and developing countries indicated a strong interest in on-going dialogue to address these needs internationally through such means as: (1) case examples of precaution in chemicals management; (2) development of a database of tools for decision-making under uncertainty; and (3) training of government officials in the use of databases and tools for applying precaution.

II. Summary of information gathered

This section presents a summary of detailed responses to the questions (in particular open-ended comments) in the structured information request, as well as those received in the interviews. Not all of the countries that responded to the structured questionnaire answered every open-ended question. This section is divided according to sections in the structured information questionnaire and interview guide. Common responses in the same section are only listed once. Except when otherwise noted, responses are from governments only.

1. How is precaution incorporated into domestic legislation/policy--is it explicit?

Precaution (or decision-making in the face of uncertainty) is explicitly incorporated into chemicals regulation in only a few cases. However, in these cases, countries reported little on experiences they have gained from implementing this explicit precautionary obligation in practice. Most countries instead report that the concept of precaution is implicitly incorporated into either their legislation or ministerial policies.

Some countries, developed and developing, have established national sustainable develop strategies; national environmental policy goals for protecting health, natural resources, or future generations; national chemicals policies; or constitutional amendments ensuring a healthy environment that explicitly or implicitly incorporate precaution or the precautionary concept that preventive action should be taken in the face of uncertain scientific evidence. Precaution is also an implicit guide to decision-making in industry initiatives such as Responsible Care (product stewardship) and pre-market testing and evaluation strategies.

Many countries, both developed and developing have established media or chemical specific legislation or policies which facilitate precautionary action. A few developed country governments have created guidance documents for applying precaution in policy. Among the most notable is the 2000 European Commission Communication on precaution. In several countries, particularly developing ones, application of precaution in a particular case has been driven by international agreements (such as

implementation of the Rotterdam or Stockholm Conventions) and commitments and pressure from donor agencies.

In one Central European country, national chemicals legislation incorporated an explicit reference to precaution:

“When there are reasonable grounds for suspecting that a certain chemical may have irreparable consequences for human health and the environment, the Government may pose a temporary restriction or ban on its manufacturing, trade or use, introduce measures for steering its manufacturing, trade or use, and introduce further measures limiting or preventing the consequences to an acceptable level before concrete and reliable scientific evidence on the effects and action/activity of such chemical are available... When deciding on measures, the Government shall take into account the seriousness and scope of possible consequences for human health and the environment, the measures taken in similar cases, the overall positive and negative consequences of possible measures and the process of scientific findings connected with the effects and action of the chemical.”

In one Latin American country, national environmental policy contains an explicit reference to precaution:

“The formulation of environmental policies will consider the results of scientific research. Nonetheless, the environmental authorities will apply the precautionary principle in that where a potential for serious or irreversible harm exists, the lack of absolute scientific certainty should not be used as a reason to postpone the adoption of effective means to prevent environmental degradation”.

In one European country, precaution underscores national chemicals policy:

“The strategic overall objective for the chemicals policy is that emissions and use of hazardous chemicals shall not cause injury to health or damage the productivity of the natural environment and its capacity for self-renewal. Concentrations of the most hazardous chemicals in the environment shall be reduced towards background values for naturally occurring substances can close to zero for manmade synthetic substances. Identification of substances to be prioritized for action is based on established criteria for unwanted properties regarding persistence, bioaccumulation and toxicity.”

2. What tools and approaches are used for applying precaution?

A range of tools and approaches were noted by different countries for applying precaution/making decisions in the face of uncertainty. Few countries reported having a defined approach for applying precaution; instead, they apply precaution more implicitly through risk assessment or risk management processes. Many countries noted that they apply precaution in data collection processes, in risk assessment, risk management options analysis, or through stakeholder and public involvement. It is important to note that some countries believe that precaution is not relevant until the risk management stage of decision-making, while others implicitly apply precaution in the risk assessment stage through conservative safety factors, worst case considerations, or other tools. For example one European country noted that:

“Precaution is used after a risk assessment has occurred, not at each step of the process. While safety factors are used in the risk assessment, precaution is not considered relevant until

decisions are made as to whether a product should be banned or restricted based on the result of the risk assessment.”

For the developed countries, tools and approaches (for example risk assessment processes) are often harmonized through either the European Commission or OECD.

While all countries attempt to address gaps in information, countries varied in how these were addressed. Developed countries tended to use safety factors and conservative risk assessment assumptions as well as research to address gaps in knowledge, while developing countries focused more on requesting additional research and assuming that lack of knowledge was an indicator of potential harm. Some developed countries also noted that in cases of incomplete data, lack of data could be considered as potential for harm.

Some of the most widely mentioned tools for applying precaution include:

1. Issuance of regulations to restrict an activity – such as transport of hazardous materials, waste controls, and import restrictions;
2. Development of labelling and safety data sheets including implementation of the Globally Harmonized System of Classification and Labelling;
3. Chemical (particularly pesticide) registration processes;
4. Application of safety factors and consideration of worst case impacts, particularly on vulnerable populations. Protection of children as a vulnerable population was mentioned in many cases;
5. Restrictions/bans on chemical use (and, in some cases, on structurally similar chemicals) and marketing including planning for chemical substitution and alternatives;
6. Placing the onus on manufacturers to provide safety data;
7. Chemical prioritization processes;
8. Chemical monitoring and research on chemical effects;
9. Environmental impact assessments;
10. Consultation with government multi-stakeholder advisory panels and with international agencies and other countries;
11. Public education/training campaigns in schools and for particular sectors of society (e.g., workers, small businesses);
12. Chemical modelling and prediction used in risk assessment as well as development of guidance documents; and
13. Outreach to industry on chemicals of concern.

About half of the government respondents indicated that they had processes in place to review decisions based on precaution (or made in the face of uncertainty), either as periodic reviews of permits/decisions, when new information arises on a particular risk, or through monitoring processes.

There was some difference between developing and developed countries, as well as between industry and the NGO/labour sector, with regard to the types of tools used. Developed countries and some Central and Eastern European countries, noted the importance of modelling techniques, detailed risk assessments and data collection, and chemical restrictions as ways to apply precaution. Some European countries also noted the importance of goal setting and chemical action plans as well as co-application of other principles such as the substitution principle.

Developing countries noted the importance of environmental impact assessment, government committees, labelling (particularly implementation of GHS), use of poison centers to identify adverse events and disseminate information, and consultation with other countries (regionally or internationally) as key tools

for implementing precaution. In a few cases, both developed and developing countries mentioned technical support for implementation of alternative technologies.

There was also a difference between industry and public interest and labour NGO stakeholders in this regard. Industry stakeholders saw precaution as being implemented through conservative risk assessment assumptions, research on chemical effects, information to consumers on safe use of products (including responding to demands for safe products), and avoidance of liability problems as key elements of implementing precaution. NGOs viewed chemical restrictions, implementation of alternatives to dangerous chemicals through consultation with downstream chemical users, and right to know including the presumption that the environment should be free of dangerous chemicals as key elements of implementing precaution.

One European country noted:

“QSAR models on the effects of chemicals are used as an important data collection tool that helps the government to prioritize which chemical require more research into their health and environmental effects.”

Some developed countries noted that how precaution is applied depends on the circumstances of the particular risk including other factors such as the availability of alternatives:

“The level of scientific certainty required to justify some form of preventive action will vary depending on the seriousness or irreversibility of the potential damage. A preponderance or balance of the evidence may be sufficient to justify some form of preventive action. In cases where the threat is extremely serious, it may be appropriate to act based on only a prima facie indication of potential for harm.”

3. Cases where precaution was applied and the consequences:

There were numerous cases noted in the responses of precaution having been applied. However, many countries, particularly developing countries, had difficulty identifying particular cases.

The identified cases varied to some degree depending on the region. Developed countries noted more industrial chemicals and chronic impacts whereas developing countries noted more actions involving pesticides, or acute risks (such as poisonings). For example, several developed countries noted restrictions on phthalates in toys and prohibition of CFCs as a key precautionary measure. Many developing countries noted the implementation of precaution in implementing bans on the 12 persistent organic pollutants listed in the Stockholm Convention. Some countries noted detailed decision-making processes that led to precautionary actions.

In these cases the key drivers for action in both developed and developing countries tended to be government, stakeholder concerns, and international or regional requirements/pressures, though the latter was most important for developing countries. Stakeholder pressure (for example NGOs) was seen as critical for application of precaution in several instances. One industry representative noted the importance of liability as a driver for precautionary action: *“One incentive to apply precaution are legal incentives [liability] in countries like the US where a wrong decision may cost the company.”* It is interesting to note that only eight countries mentioned cases in which precaution was not applied. Some of the particular actions cases reported include:

Africa:

1. Obsolete stockpiled POPs used to combat locusts sent back to country of origin because of potential impacts; and
2. Establishment of government subcommittee to examine potential pesticides to combat locusts

Asia:

1. Restriction of the pesticides diazanon and chlorpyrifos and importation of wood treated with copper chromium arsenate; and
2. Teaching of government and medical professionals about burning of medical waste containing PVC plastics (noted by NGOs)

Latin America

1. Prohibition of aerial spraying of glyphosate to control coca;
2. Prohibition of the use of lindane;
3. Reduction of use of organic solvents in toys; and
4. Elimination of use of endosulfan among coffee producers (NGO)

Central and Eastern Europe

1. Prohibition of paraquat due to purposeful poisoning

Western Europe & Other Countries

1. Prohibition toys containing phthalates for young children;
2. Restrictions on CFCs as propellants;
3. Restriction on agricultural use of sewage sludge; and
4. Restriction on scented or colored lamp oils.

An industry organization noted that as a result of risk assessments indicating potential high exposure (due to failure to use personal protective equipment), a particular pesticide was only approved for tractor spraying and not backpack spraying.

Developed countries noted that the implications of applying precaution were primarily positive, while developing countries in some cases noted that precaution could have some negative implications (for example economic). Benefits from applying precaution included: ecological or health benefits, improved government/industry image, improved government morale, improved public understanding of chemical risks, improved capacity to make decisions, improved opportunities for tourism, and improvements in scientific research and research on alternative technologies. Both developed and developing countries noted some positive, unintended consequences in terms of improved agency standing, improved tools and an ability to act on new risks. Some developing countries noted that it was cheaper to act now than clean up damage later and that successful cases can strengthen implementation of legislation overall. One Latin American country noted that taking precaution strengthened the image of its health authorities, in addition to improving knowledge and capacity in risk assessment and safe management of chemicals. Negative implications noted were primarily economic and related to a particular industrial sector or to the costs in government resources of taking unnecessary actions. In some cases, concerns about health impacts of alternatives or their viability were also identified.

4. Lessons learned: Challenges to implementation and how they are being addressed

Both developed and developing countries noted numerous challenges with respect to application of precaution in their chemical safety policies. These challenges differ considerably between developed and developing countries, though there are some overlaps, particularly in terms of information gaps and challenges of intra-governmental coordination. For developed countries, issues with respect to regional or international trade appear to be important challenges to implementation of precaution. Several developed and developing countries noted the importance of economic tensions (concerns about adverse economic impacts from precautionary actions) as a challenge to implementation. However, most respondents noted the importance of considering the socio-economic implications of precautionary decisions, in particular, their proportionality.

Most countries noted the importance of basic information and understanding of risks as a prerequisite for precautionary action. While the lack of data on chemical risks is important, one developed country noted the importance of information on preventive interventions: *“while uncertainty about a threat’s severity is an impediment to a decision to act, a lack of clarity on what corrective measure will be effective can defer a decision.”* Some developing countries also noted that given limits in their capacity to conduct detailed risk assessments, an ability to act on the basis of uncertain information is critical. Several developed and developing countries noted challenges of intra-governmental coordination of policies, particularly between environment/health and economics ministries as well as coordination and capacity of local authorities.

In both developed and developing countries, these challenges appear to be similar for both chemical risks for which there is uncertainty and for those that are more well-established. However, several countries indicated that the challenges are more accentuated for uncertain chemical risks.

Developing countries noted significant challenges in implementing precaution, as previously noted. These include: lack of financial resources, lack of technical resources for risk assessment and risk management, lack of data on chemical risks and research on chemicals, lack of public awareness (and training, education), lack of incentives for implementing safer processes and products, and lack of political power to enforce decisions. One Central and Eastern European country stated:

“It is worthwhile to note that the level of public awareness of possible risks of chemical substances and waste is far from perfect and needs to be improved. In general, the low level of environmental knowledge of representatives of managing bodies impedes making environmentally sound decisions.”

Several developed and developing countries noted that it is important to raise awareness about chemical risks as a prerequisite to precautionary actions and that dialogue across countries on tools and approaches is one way to enhance a more consistent and effective approach to precaution. Several countries and other stakeholders noted the importance of involving the private sector, particularly users of chemicals, in efforts to apply precaution to understand the challenges of process and product change and affect more sustainable solutions. Further many noted the importance of stakeholder engagement – particularly with NGOs – to improve decision-making under uncertainty as well as to enhance accountability, transparency, and sustainability of decisions. Industry stakeholders noted the importance of expecting the unexpected in that a realistic approach is needed given that products will not always be used as intended or directed. This requires field monitoring studies to understand chemical use. One labor representative noted an important lesson from the workers’ perspective that:

“It’s never possible to say that a chemical is harmless and therefore exposure should always be limited as much as possible. The second is that chemicals are often put on the market when there is little or no information about them, which is yet another reason to keep exposure as low as possible.”

A European government noted the challenges of decisions under uncertainty:

“In general, any political decision-making contains challenges in terms of balancing economic, social and other effects of a potential measure, differing civil society interests involved and other aspects such as uncertainty and proportionality...Answers to these challenges include information accessibility, transparency, cooperation, close coordination and coherent action with all parties concerned.”

Some particular challenges noted by respondents include:

Africa

1. Lack of information;
2. Precaution is not formalized in decision-making procedures/no clear national strategy for chemical management or the application of precaution;
3. Few independent experts who can conduct risk assessments;
4. No coordination between different sectors of national government, for example, with customs agents; and
5. Chemicals imported into the country may be classified or labelled in such a way that their properties are not understood; for example, they may be labelled in a foreign language.

Asia

1. Lack of public awareness (addressed by media public awareness campaigns);
2. Limited human and financial resources to conduct research; and
3. Lack of effective implementation, monitoring and evaluation of legal provisions already in place to protect the environment.

Central and Eastern Europe

1. Lack of data because country does not have sufficient financial resources to monitor chemicals;
2. Representatives of managing bodies and society have a low level of environmental knowledge on the risks posed by dangerous chemicals, wastes, and pesticides; and
3. Precaution is not seen as economically sound; can be addressed by illustrating the ultimate financial gains of applying precaution.

Latin America and Caribbean

1. Government often submits to pressure from powerful lobbying groups in business sector;
2. Information primarily provided by industry and foreign countries because no national research facilities for chemicals exist;
3. Limited scientific capacity because there are not enough training programs that encourage people to go into chemicals toxicology, risk assessment, and technology fields;
4. Legal barriers that prevent consumers from obtaining information (such as classification and labelling of chemicals) that could help them manage their products properly;
5. No legislation that directly addresses chemicals; insufficient legal authority of agencies to implement programs;
6. Inadequate funding because not enough importance is given to scientific studies and investigation
7. Multi-stakeholder committees may not have any political power;

8. Inadequate awareness among political leaders of the negative impacts chemicals can have on health and the environment; and
9. The professionals conducting chemicals research are poorly trained.

Western Europe and Other Countries

1. Implementing bans or restrictions of chemicals requires agreements between the Minister of Environment and the Minister of the Economy;
2. Lack of scientific information because of uncompleted risk assessments on High Production Volume Chemicals;
3. Lack of resources to manage all of the available information needed to make decisions;
4. Pressure to avoid technical barriers to trade and to harmonize with EU regulations;
5. Communication problems between countries concerning what the concept of precaution is and how it is meant to be used, with some countries believing that it will be used as a protectionist tool in trade; and
6. Fear of making politically unpopular decisions.

International

Labour Union:

1. Lack of human and economic resources to get more and better scientific information;
2. Fear of lawsuits for banning or issuing warnings on chemicals;
3. Legal and political constraints on what can be done at the national level because of trade agreements like WTO and the European Economic Area; and
4. Pressures to harmonize with the EU which may have less restrictive regulations.

Public Interest NGOs:

1. Lack of coordination within the countries' various ministries;
2. Treating cost effectiveness instead of health as the primary consideration in pesticide regulation;
3. Environmental and long-term costs are not considered when estimating costs of hazardous chemicals regulation;
4. Legal frameworks do not provide incentives to encourage adoption of safer alternatives;
5. Funding to research chemicals issues is decreasing because it is not considered a top priority ;
6. Lack of objective public policies that would create incentives for capacity-building and the participation of civil society; and
7. No policies to promote the use of environmentally acceptable and sustainable products and processes.

Industry:

1. Incorrect usage of products by public;
2. Lack of effective and enforced regulations and monitoring in developing countries to ensure correct usage;
3. Moving away from a chemical entirely raises anti-trust issues; and
4. Difficulty of reaching out to smaller enterprises in developing countries to provide the tools needed to implement precaution.

5. Perceptions of precaution debates

Despite some of the global debates regarding application of precaution in chemicals safety efforts, there is no clear perception as to why the concept has generated concerns. Governments identified a wide range of opinions as to concerns about the application of precaution in the context of chemicals safety. These

opinions vary to some degree depending on the stakeholder and region. As noted by one African respondent, “*Some countries do not want to negatively affect business, and so they are willing to accept some negative health and environmental impacts.*”

Some of the responses from various regions include:

Africa

1. Precaution is a valuable approach for countries which cannot afford full scientific investigations of all risks.

Asia

1. Precaution is not considered a priority for the national agenda and may be perceived as a tool for establishing trade barriers in developed countries.

Central and Eastern Europe

1. The required "level of proof" in individual cases can be problematic;
2. The cost/benefit consideration of applying precaution can be difficult because of uncertainty factors; and
3. Precaution is seen as economically unsound.

Latin America & Caribbean

1. There is a lack of understanding of what precaution is and how it can be applied.

Western Europe & Other Countries

1. Precaution is often cited as a justification to prohibit use of a chemical rather than as a reason for applying measures to control releases;
2. There is no societal consensus about the legitimacy of precautionary measures;
3. The concept of precaution has been "emotionalized," creating concern that it will be not be properly based on scientific research; and
4. The ideology of “sound science.”

International

Labour Union:

1. Precaution is seen as a technical barrier to trade; and
2. Developing countries view precaution as a threat to their export industries, because they do not have the resources to provide the information required under regulations like REACH.

Public Interest NGO:

1. There is no common procedure for applying precaution;
2. There is an aversion in the economic sector to applying precaution because it is seen as an obstacle to economic development; and
3. Government agents surrender easily to private sector pressure and do not adequately take into account environmental and public health consequences of inaction.

Industry:

1. Precaution can result in arbitrary decisions based on emotion instead of legitimate science; and
2. Precaution should be understood as a tool for proper management of chemicals on the market, and not only as a tool for banning or phasing something out.

6. Most important needs and types of information/dialogue that would be useful

Respondents identified a broad range of needs for more effectively applying precaution and making decisions in the face of uncertainty. Many of these needs, particularly in developing countries and countries in transition, relate to general chemicals management activities. These needs varied based on whether countries were developed or developing, though there was significant overlap in some cases. All regions shared a particular interest in improved data on chemical toxicity/risks and tools for prioritization. Coinciding with this was a desire for better information and education of consumers and the public so they can make more informed choices. Also of importance across regions was increased national and international dialogue on: tools for applying precaution and making decisions in the face of uncertainty; exposure, hazard and risk estimation tools; and alternative chemicals and technologies. One developing country stated:

“There needs to be greater dialogue across various chemical programs within a country or the same chemical program in several countries, to understand how precaution is applied and to facilitate sharing of best practices and lessons learned.”

For developing countries and countries in transition, tools for risk assessment, technical assistance in risk assessment and risk management processes, and financial support for implementation were all important. Long term maintenance and enforcement of programs was also an important concern. Further, some developing countries noted a lack of understanding regarding tools that can be applied in the face of uncertain risks; since precaution is a relatively new concept, they believed that knowledge on its application would be very beneficial.

One Central and Eastern European country summarized the needs of developing countries succinctly:

“Scientific capacity building and scientific information collection are necessary elements to give a basis for the application of precaution. There is a lack of data on toxic chemicals and the risks they pose, there is a lack of knowledge and experience in risk assessment techniques; there is too little experience in risk management; there are insufficient funds for implementation; sharing information, especially practice information, in international dialogues is very fruitful.”

That same country also noted the need for legal authorities to apply precaution:

“The primary goal (of precaution) is to avoid harm by taking preventive action based on the best available information, even if it is not yet clear how dangerous or wide-spread a particular threat may be. The most important tool for accomplishing this is having a legal system which ensures that preventive actions taken in the face of scientific uncertainty will be enforceable. Precautionary principles must be integrated directly into legislation to create a legal basis for using precaution once scientific data have been collected.”

A Latin American country similarly noted that:

“Technical assistance as much in risk assessment as in risk management is a priority for harmonizing the application of precaution which will permit the development of new tools for risk analysis and decision-making. This will only occur with financial support.”

Finally, many countries, both developing and developed, noted the value of discussing tools and approaches and using case examples to show how precaution has been applied in the context of chemicals safety. An NGO noted the importance of sharing experiences:

“The next step to addressing these barriers and applying precaution is to demonstrate through the use of case studies how precaution works. By giving the practice aspect of precaution, it will become less esoteric and less likely to be perceived as harmful to particular stakeholders.”

Specific needs noted by governments and other stakeholders for enhancing application of precaution include:

Africa

1. Additional meetings after Forum V to help countries take measures to implement precaution, particularly by learning from case studies;
2. Involvement of local governments in implementing precautionary approaches;
3. Formalization of decision-making procedures;
4. Independent experts to provide services for chemical risk assessment and management;
5. Financial help and capacity building to implement programs on chemical risk management;
6. Networks to exchange relevant information; and
7. Bilateral and multilateral cooperation, notably through countries ratifying environmental international conventions.

Asia

1. Enhanced coordination between government and other agencies (including NGOs);
2. Greater public awareness about hazardous materials and their effects on health and environment;
3. Sufficient human resources so research can be conducted to address the lack of scientific information and to create government accountability to public and other sectors; and
4. Technical and financial support to establish and implement necessary programs and strategies.

Central and Eastern Europe

1. Improving the level of public awareness of possible risks on chemical substances and wastes;
2. Improving the level of knowledge on the impacts of dangerous chemical substances, pesticides, and wastes among regulatory and management bodies;
3. Acquiring and training new personnel and stabilizing and motivating experts;
4. Technical and financial resources to conduct research even when there are qualified human resources;
5. Data on chemical risks, toxicity, and ecotoxicity, as well as tools for risk assessment;
6. International discussion on country experiences regarding chemical safety and management, as well as information on actions taken to harmonize with EU legislation;
7. Establishment of common approaches, including international guidelines, on implementation of the principle;
8. Establishment of an international database which could compile information on precautionary measures; and
9. Establishment of a communication system for the public in general so they can learn about proper use and disposal of chemicals.

Latin America and Caribbean

1. Reliable information to convince political authorities and stakeholders to take more interest in environmental problems;
2. International dialogue among technical experts to improve environmental procedures, methods, and analysis, including the instruments that might be used for risk evaluation by developed countries; and
3. Financial assistance from the UN to properly manage chemical products.

Western Europe & Other Countries

1. Resources and ability to manage available information;
2. Sharing the burden of assessment processes among other countries;
3. A global exchange of information across Europe (through REACH) as well as world-wide;
4. Discussions of precaution on an international level between nations' various agencies to build relationships on the issue and create a better understanding of how the principle is actually used; and
5. Clarity about environmental protection goals.

International

Labour Union:

1. Finding ways to collect data which meets the EU REACH legislation's demands in a way that is transparent and unbiased; there needs to be a procedure to audit and control this information impartially.

Public Interest NGO:

1. Training in key areas of health and safety and international environmental management regulations;
2. Sufficient information with respect to chemicals properties to be disseminated to all concerned people;
3. Periodic monitoring and evaluation of the effectiveness of precautionary measures through the help of more user-friendly technology;
4. A proper ministry in place with a proper mandate and infrastructure to apply precaution, along with the necessary human and financial resources;
5. Discussion on alternative approaches and related technologies to make precaution a practical option;
6. Creating the political will to integrate the activities of all levels and sectors of government (e.g., health, education, culture, labour, and environment) that are related to chemical safety;
7. Improvement of the government's relationship with organized civil society; and
8. Attaining a mutual understanding of what the precautionary principle really is and when to apply it; requires involvement of jurists, technicians, researchers, scientists, government officers, entrepreneurs and civil society.

Industry:

1. Better international regulation and improved monitoring of those regulations in developing countries to ensure correct product usage;
2. NGOs should speak with a company directly if they find a problem with one of its products on the marketplace; and
3. More local capacity building; e.g., teaching companies in a practical way how to take advantage of OECD risk assessment tools.

**IV. Tabulated Summary of Responses
Structured Information Questionnaire**

(as at 4 September 2006)

Groups	AFRICA	A&P	C&EE	LAC	WEOG
Number of countries having completed the questionnaire	9	5	9	8	9
Number of NGOs	6				

Note: one Asia and Pacific country responded in different format and as a result its response could not be tabulated

National chemicals policy or management	AFRICA	A&P	C&EE	LAC	SubTotal	WEOG	Total	NGOs
1. a In the country constitution	2	1	3	1	7	2	9	6
1. b In legislation	7	3	7	8	25	9	34	5
1. c In agency/ministry/organization policy	8	3	7	6	24	9	33	5
1. d In specific guidance documents	3	2	3	4	12	6	18	1
1. e Applied in specific cases	6	1	1	4	12	1	13	5
1. f Not applied at all	1	0	0	2	3	0	3	0

2. Tools and approaches for applying precaution	AFRICA	A&P	C&EE	LAC	SubTotal	WEOG	Total	NGOs
2. a YES	2	3	6	3	14	3	17	3
No	6	2	1	5	14	5	19	3
2. b1 Data collection	4	4	6	6	20	2	22	5
2. b2 Prioritization of substances	2	3	4	4	13	2	15	3
2. b3 Uncertainty characterization	4	0	3	2	9	3	12	2
2. b4 Socio-economic analysis	2	3	2	4	11	3	14	4
2. b5 Risk assessment/management options	3	4	7	3	17	6	23	2
2. b6 Screening, comparison of alternatives, informed substitution	2	1	3	2	8	4	12	4
2. b7 Stakeholder and Public involvement	2	4	4	5	15	3	18	4
2. b8 Other	1	0	1	2	4	0	4	2
2. c1 Though conservative risk assessment assumptions	1	2	3	1	7	8	15	4
2. c2 Through safety factors	3	0	4	0	7	7	14	4
2. c3 Through modeling techniques	0	0	4	1	5	5	10	4
2. c4 An assumption that lack of information is indication of potential harm	4	3	3	5	15	3	18	3
2. c5 Through requesting additional research	3	2	4	8	17	6	23	3
2. c6 Gaps are not addressed	1	0	0	0	1	0	1	3

3. What stimulated/initiated the precaution process/action	AFRICA	A&P	C&EE	LAC	SubTotal	WEOG	Total	NGOs
3. a1 Government concern over hazards and/or exposures	7	4	4	6	21	7	28	2
3. a2 Stakeholder concerns over the particular threat	5	2	3	2	12	4	16	7
3. a3 International policy requirements/pressures	2	3	5	4	14	1	15	4
3. a4 Negative impacts/experience(s) from not acting on a previous chemical risk	3	1	1	1	6	0	6	3
3. a5 Other	2	0	0	0	2	1	3	3
Positive								
3. c1 Ecological or Health benefits	4	3	4	2	13	7	20	7
3. c2 Economic benefit	1	4	2	0	7	1	8	5
3. c3 Improved government/industry image	4	4	3	6	17	6	23	0
3. c4 Improved government/public morale	1	2	3	5	11	6	17	3
3. c5 Improvements to scientific tools/decision processes	2	3	2	4	11	2	13	1
3. c6 Other	0	0	0	1	1	1	2	3
Negative								
3. c7 Ecological or health impacts	2	3	0	0	5	0	5	2
3. c8 Economic impacts	0	1	2	0	3	2	5	2
3. c9 Substitutes/alternatives did not work	2	1	0	0	3	0	3	1
3. c10 Negative public reaction	2	1	0	1	4	0	4	2
3. c11 Other	1	0	0	1	2	0	2	1
3. d Positive consequences	3	4	2	5	14	1	15	2
3.d Negative consequences	3	2	0	1	6	0	6	4

4. Particular cases where precaution was not applied	AFRICA	A&P	C&EE	LAC	SubTotal	WEOG	Total	NGOs
Yes	1	2	1	2	6	2	8	5
No	7	3	6	6	22	3	25	2

5. Governments with processes in the face of uncertainty	AFRICA	A&P	C&EE	LAC	SubTotal	WEOG	Total	NGOs
Yes	4	3	4	2	13	4	17	1
No	5	2	3	6	16	2	18	5

6. Biggest challenges on application of precaution	AFRICA	A&P	C&EE	LAC	SubTotal	WEOG	Total	NGOs
Scientific capacity	7	1	3	6	17	1	18	5
Lack of scientific information	5	2	5	2	14	6	20	5
Legal challenges	5	2	2	7	16	1	17	5
Technical challenges	5	5	4	8	22	2	24	4
Financial challenges	7	3	6	7	23	2	25	4
Trade Challenges	2	2	2	4	10	4	14	3
Other?	2	1	1	2	6	3	9	5
Yes challenges also applicable to decision-making and actions	3	5	4	8	20	6	26	5
No	3	0	2	0	5	4	9	0

7. Most important needs for more effectively applying precaution	AFRICA	A&P	C&EE	LAC	SubTotal	WEOG	Total	NGOs
7.1 Data on chemical toxicity/risks	6	5	3	6	20	4	24	5
7.2 Tools for prioritization	5	3	4	4	16	4	20	3
7.3 Tools for risk assessment	8	4	4	8	24	1	25	5
7.4 Decision-making tools/frameworks	5	4	4	5	18	2	20	3
7.5 Technical assistance in risk assessment processes	9	4	4	8	25	1	26	6
7.6 Technical assistance in risk management processes	9	3	3	8	23	0	23	6
7.7 Financial support for implementation	9	2	5	9	25	1	26	6
7.8 International dialogue	5	3	2	4	14	3	17	5
7.9 Information sharing to facilitate understanding of the issues	7	3	6	6	22	1	23	5
7.10 Other	4	0	1	2	7	1	8	5