Examples of Principles Related to Toxic Chemicals Management and Sustainability

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State and Federal Examples of Toxics Policy Principles

Example #1: 13 States' Principles on Reform of the Toxic Substances Control Act, 2009

Source: http://www.ecy.wa.gov/news/2009news/docs/TSCAstatesSIGTFINAL.pdf

STATES' PRINCIPLES ON REFORM OF THE
TOXIC SUBSTANCES CONTROL ACT
DECEMBER 2, 2009

Require Chemical Data Reporting. Chemical and product manufacturers should be required to develop and provide chemical health and safety information, as well as exposure and use data, including the presence of toxic chemicals in products and the associated chemical hazards and risks, to regulators, businesses, and the public.

Demonstrate Chemicals and Products are Safe. Manufacturers should provide the necessary information to regulators to conclude that new and existing chemicals and products in commerce are safe and do not endanger the public or the environment. The public has a right to expect that the products they use are safe.

Prioritize Chemicals of Concern. Government should identify and prioritize chemicals of concern in order to regulate the most problematic chemicals in commerce, and have the authority to take timely action to protect people and the environment. Sufficient resources should be made available to support these actions.

Protect the Most Vulnerable. Chemical regulation should be designed to protect the most vulnerable, including pregnant women and children.

Promote Safer Chemicals and Products. Based on green chemistry principles, manufacturers should be required to assess and identify safer alternatives to problematic chemicals of concern. Government should establish protocols for evaluating potential alternatives to chemicals of concern.

Address Emerging Contaminants. Emerging chemicals of concern, including nanoscale materials, need to be assessed for public and environmental safety before they go into widespread commerce and use.

Strengthen Federal Law & Preserve States' Rights. States acknowledge the need for a strong federal chemical regulation system, while expressly preserving the authority of state and localities to implement measures to manage chemicals of concern.

Fund State Programs. Effective state-federal governance should enhance the role of states in TSCA implementation, promote data and information sharing, and provide sustained funding for state programs. The states are in a unique position to provide innovative, cost-effective solutions for chemicals of concern prioritization, interstate data sharing, and safer chemical alternatives assessments.

Example #2: ECOS Resolution on TSCA Reform (Excerpt), August 2010

Source: http://www.ecos.org/files/4195_file_Resolution_10_8_TSCA_reform.DOC

ECOS supports congressional action on TSCA reform that:

- ensures the burden is effectively placed on manufacturers to prove that existing and new chemicals are safe;
- provides U.S. EPA with adequate authority to ensure that existing and new chemicals are safe and to take action when they are not;

- establishes a streamlined process for U.S. EPA to share data with states, including confidential business information provided to U.S. EPA;
- ensures the preservation of state authority to protect citizens and the environment from toxic exposures and to manage chemicals of concern; and only restricts that authority if compliance with both state and federal law would be impossible;
- enhances timely state/federal consultation and coordination in areas of particular concern to the states, including the development and implementation of hot spot action plans, prioritization of the most severely impacted communities and providing a source of funding to state and local governments to conduct chemicals management technical assistance;
- expands the scope of risk-based safety standards to include hazard assessment;
- authorizes U.S. EPA to require a safer alternatives assessment for any chemical U.S. EPA identifies as a Priority Chemical, such as Persistent, Bioaccumulative and Toxic (PBT) or "very Persistent and very Bioaccumulative chemicals;"
- expands U.S. EPA's authority to oversee the risk and environmental health impacts of engineered nanomaterials and other emerging technologies;
- authorizes U.S. EPA to take expedited action when a chemical presents an "imminent <u>or</u> substantial endangerment;"
- provides U.S. EPA with authority to impose interim conditions and to take expedited action until a safety determination is made, when data or information suggests significant concern about a chemical;
- enhances the safer alternatives assessment to encourage a process of continuous improvement and establishment of a set of criteria for performing assessments that, at a minimum, relies on consideration of the impacts through the life cycle of the chemical;
- facilitates the development of a trained workforce to strengthen and enhance green chemistry research, development and adoption while stimulating innovation, business and job creation; and
- mandates improved coordination within U.S. EPA on the implementation of TSCA and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and between U.S. EPA and other federal agencies with responsibilities for management and oversight of chemicals, including the Food and Drug Administration (FDA), the Occupational Safety and Health Administration (OSHA) and the Consumer Product Safety Commission (CPSC).

Example #3: Regulatory Response Principles in California's Proposed Safer Consumer Products Regulations, 2012

Source: Summary of Proposed Safer Consumer Products Regulations, July 2012, pp. 14-15, http://www.dtsc.ca.gov/upload/SCPProposedRegulationsSummaryJuly2012.pdf

A. Regulatory Response Selection Principles *[Section 69506]*

(1) DTSC will require implementation of regulatory responses designed to protect public health and the environment, and maximize the use of alternatives of least concern, where such alternatives are technically and economically feasible.

(2) DTSC will give preference to regulatory responses providing the greatest level of inherent protection. More specifically, preference will be given to alternatives that avoid or reduce adverse impacts and/or exposures through product or process redesign as opposed to alternatives that use administrative or engineering controls to limit exposures to a COC in a product.

(3) In selecting regulatory responses, DTSC may consider any or all of the following factors:

- The likely actual effectiveness of the regulatory response, including the capacity of responsible entities to comply, and the ability of end-users to understand and act upon any information and directions provided with respect to the product
- The relative cost-effectiveness of the regulatory response as compared to other possible responses
- The administrative and other burdens that the regulatory response would place upon DTSC, the responsible entities, the product end-users, and the public
- Any unique or additional burdens that would be imposed by the regulatory response upon sensitive subpopulations
- The ease and efficacy of enforcement of the regulatory response

[Note: Other sections describe the regulatory response process and its applicability.]

Example #4: EPA's Principles for Reform of Chemicals Management Legislation

Source: http://www.epa.gov/opptintr/existingchemicals/pubs/principles.html
(Principles released in 2009; webpage last updated on July 17, 2012)

The following Essential Principles for Reform of Chemicals Management Legislation (Principles) are provided to help inform efforts underway in this Congress to reauthorize and significantly strengthen the effectiveness of TSCA. These Principles present Administration goals for updated legislation that will give EPA the mechanisms and authorities to expeditiously target chemicals of concern and promptly assess and regulate new and existing chemicals.

Principle No. 1: Chemicals Should be Reviewed Against Safety Standards that are Based on Sound Science and Reflect Risk-based Criteria Protective of Human Health and the Environment.
EPA should have clear authority to establish safety standards that are based on scientific risk assessments. Sound science should be the basis for the assessment of chemical risks, while recognizing the need to assess and manage risk in the face of uncertainty.

Principle No. 2: Manufacturers Should Provide EPA with the Necessary Information to Conclude That New and Existing Chemicals are Safe and Do Not Endanger Public Health or the Environment.
Manufacturers should be required to provide sufficient hazard, exposure, and use data for a chemical to support a determination by the Agency that the chemical meets the safety standard. Exposure and hazard assessments from manufacturers should be required to include a thorough review of the chemical's risks to sensitive subpopulations

Where manufacturers do not submit sufficient information, EPA should have the necessary authority and tools, such as data call in, to quickly and efficiently require testing or obtain other information from manufacturers that is relevant to determining the safety of chemicals. EPA should also be provided the necessary authority to efficiently follow up on chemicals which have been previously assessed (e.g., requiring additional data or testing, or taking action to reduce risk) if there is a change which may affect safety, such as increased production volume, new uses or new information on potential hazards or exposures. EPA's authority to require submission of use and exposure information should extend to downstream processors and users of chemicals.

Principle No. 3: Risk Management Decisions Should Take into Account Sensitive Subpopulations, Cost, Availability of Substitutes and Other Relevant Considerations.
EPA should have clear authority to take risk management actions when chemicals do not meet the safety standard, with flexibility to take into account a range of considerations, including children's health, economic costs, social benefits, and equity concerns.

Principle No. 4: Manufacturers and EPA Should Assess and Act on Priority Chemicals, Both Existing and New, in a Timely Manner.
EPA should have authority to set priorities for conducting safety reviews on existing chemicals based on relevant risk and exposure considerations. Clear, enforceable and practicable deadlines applicable to the Agency and industry should be set for completion of chemical reviews, in particular those that might impact sensitive sub-populations.

Principle No. 5: Green Chemistry Should Be Encouraged and Provisions Assuring Transparency and Public Access to Information Should Be Strengthened.
The design of safer and more sustainable chemicals, processes, and products should be encouraged and supported through research, education, recognition, and other means. The goal of these efforts should be to increase the design, manufacture, and use of lower risk, more energy efficient and sustainable chemical products and processes.

TSCA reform should include stricter requirements for a manufacturer's claim of Confidential Business Information (CBI). Manufacturers should be required to substantiate their claims of confidentiality. Data relevant to health and safety should not be claimed or otherwise treated as CBI. EPA should be able to negotiate with other governments (local, state, and foreign) on appropriate sharing of CBI with the necessary protections, when necessary to protect public health and safety.

Principle No. 6: EPA Should Be Given a Sustained Source of Funding for Implementation. Implementation of the law should be adequately and consistently funded, in order to meet the goal of assuring the safety of chemicals, and to maintain public confidence that EPA is meeting that goal. To that end, manufacturers of chemicals should support the costs of Agency implementation, including the review of information provided by manufacturers.

Nongovernmental Examples of Toxics Policy Principles

Example #5: American Chemistry Council's 10 Principles for Modernizing TSCA

Source: http://www.americanchemistry.com/Policy/Chemical-Safety/TSCA/10-Principles-for-Modernizing-TSCA.pdf

1. Chemicals should be safe for their intended use.

- Ensuring chemical safety is a shared responsibility of industry and EPA.
- Industry should have the responsibility for providing sufficient information for EPA to make timely decisions about safety.
- EPA should have the responsibility for making safe use determinations for high priority chemicals, focusing on their most significant uses and exposures.
- Safe use determinations should integrate hazard, use, and exposure information, and incorporate appropriate safety factors.
- Consideration of the benefits of chemicals being evaluated, the cost of methods to control their risks, and the benefits and costs of alternatives should be part of EPA's risk management decision making, but should not be part of its safe use determinations.
- Other agencies, such as FDA and CPSC, should continue to make safety decisions for products within their own jurisdictions.

2. EPA should systematically prioritize chemicals for purposes of safe use determinations.

- Government and industry resources should be focused on chemicals of highest concern.
- The priorities should reflect considerations such as the volume of a chemical in commerce; its uses, including whether it is formulated in products for children; its detection in biomonitoring

programs; its persistent or bioaccumulative properties; and the adequacy of available information.

3. EPA should act expeditiously and efficiently in making safe use determinations.

- Since a chemical may have a variety of uses, resulting in different exposure potentials, EPA should consider the various uses and focus on those resulting in the most significant exposures.

4. EPA should complete safe use determinations within set timeframes. Companies that manufacture, import, process, distribute, or use chemicals should be required to provide EPA with relevant information to the extent necessary for EPA to make safe use determinations.

- Companies throughout the chain of commerce should be responsible for providing necessary hazard, use, and exposure information.
- EPA should be authorized to require companies, as appropriate, to generate relevant new data and information to the extent reasonably necessary to make safe use determinations without having to prove risk as a prerequisite or engaging in protracted rulemaking.
- Testing of chemicals should progress to more complex and expensive tests through a tiered approach as needed to identify hazards and exposures of specific concern.
- To minimize animal testing, existing data should be considered prior to new testing, and validated alternatives to animal testing should be used wherever feasible.
- Existing data and information should be leveraged in EPA's safe use determinations, including data and information from other mandatory and voluntary programs such as REACH and the U.S. High Production Volume challenge.

5. Potential risks faced by children should be an important factor in safe use determinations.

- Safe use determinations should consider the effects of a chemical on children and their exposure to the chemical.
- Safe use determinations should consider whether an extra margin of safety is needed to protect children.

6. EPA should be empowered to impose a range of controls to ensure that chemicals are safe for their intended use.

- The controls could range from actions such as labeling, handling instructions, exposure limits and engineering controls to use restrictions and product bans.
- The controls should be appropriate for managing the risk, taking into account alternatives, benefits, costs, and uncertainty.

7. Companies and EPA should work together to enhance public access to chemical health and safety information.

- EPA should make chemical hazard, use, and exposure information available to the public in electronic databases.
- Other governments should have access to confidential information submitted under TSCA, subject to appropriate and reliable protections.
- Companies claiming confidentiality in information submittals should have to justify those claims on a periodic basis.
- Reasonable protections for confidential as well as proprietary information should be provided.

8. EPA should rely on scientifically valid data and information, regardless of its source, including data and information reflecting modern advances in science and technology.

- EPA should establish transparent and scientifically sound criteria for evaluating all of the information on which it makes decisions to ensure that it is valid, using a framework that addresses the strengths and limitations of the study design, the reliability of the test methods, and the quality of the data.
- EPA should encourage use of good laboratory practices, peer review, standardized protocols, and other methods to ensure scientific quality.

9. EPA should have the staff, resources, and regulatory tools it needs to ensure the safety of chemicals.

- EPA's budget for TSCA activities should be commensurate with its chemical management responsibilities.

10. A modernized TSCA should encourage technological innovation and a globally competitive industry in the United States.

- A new chemical management system should preserve and enhance the jobs and innovative products and technologies contributed by the business of American chemistry.
- Implementation of TSCA should encourage product and technology innovation by providing industry certainty about the use of chemicals.

Example #6: Business-NGO Workgroup's Principles for Safer Chemicals

Source: http://www.bizngo.org/guidingPrinciples.php

To advance an economy where the production and use of chemicals are healthy for humans, as well as for our global environment and its non-human inhabitants, responsible companies and their supply chains should adopt and implement the following four guiding principles for chemicals policy:

1. **Know and disclose product chemistry.** Manufacturers will identify the substances associated with and used in a product across its lifecycle and will increase as appropriate the transparency of the chemical constituents in their products, including the public disclosure of chemicals of high concern. Buyers will request product chemistry data from their suppliers.
2. **Assess and avoid hazards.** Manufacturers will determine the hazard characteristics of chemical constituents and formulations in their products, use chemicals with inherently low hazard potential, prioritize chemicals of high concern[1] for elimination, minimize exposure when hazards cannot be prevented, and redesign products and processes to avoid the use and/or generation of hazardous chemicals. Buyers will work with their suppliers to achieve this principle.
3. **Commit to continuous improvement.** Establish corporate governance structures, policies and practices that create a framework for the regular review of product and process chemistry, and that promote the use of chemicals, processes, and products with inherently lower hazard potential.
4. **Support public policies and industry standards that:** advance the implementation of the above three principles, ensure that comprehensive hazard data are available for chemicals on the market, take action to eliminate or reduce known hazards and promote a greener economy, including support for green chemistry research and education.

These principles are key features of an effective strategy for promoting, developing and using chemicals that are environmentally preferable across their entire lifecycle.

[1] "Chemicals of high concern" include substances that have the following properties: 1) persistent, bioaccumulative and toxic (PBT); 2) very persistent and very bioaccumulative (vPvB); 3) very persistent and toxic (vPT); 4) very bioaccumulative and toxic (vBT); 5) carcinogenic; 6) mutagenic; 7) reproductive or developmental toxicant; 8) endocrine disruptor; or 9) neuro-toxicant. "Toxic" (T) includes both human toxicity and ecotoxicity.

Principles for Green Chemistry, Sustainable Materials Management, and Sustainable Development

Example #7: 12 Principles of Green Chemistry

Source: Paul Anastas, Ph.D. and John Warner, Ph.D. in ***Green Chemistry: Theory and Practice*** (Oxford University Press: New York, 1998), available on EPA's website, http://www.epa.gov/sciencematters/june2011/principles.htm

Green chemistry, also known as sustainable chemistry, is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. Green chemistry applies across the life cycle of a chemical product, including its design, manufacture, and use.

The 12 Principles of Green Chemistry, originally published by current EPA Assistant Administrator Paul Anastas, Ph.D. and John Warner, Ph.D. in ***Green Chemistry: Theory and Practice*** (Oxford University Press: New York, 1998), provide a road map for chemists to implement green chemistry.

The twelve principles are:

1. **Prevention**
   It's better to prevent waste than to treat or clean up waste afterwards.
2. **Atom Economy**
   Design synthetic methods to maximize the incorporation of all materials used in the process into the final product.
3. **Less Hazardous Chemical Syntheses**
   Design synthetic methods to use and generate substances that minimize toxicity to human health and the environment.
4. **Designing Safer Chemicals**
   Design chemical products to affect their desired function while minimizing their toxicity.
5. **Safer Solvents and Auxiliaries**
   Minimize the use of auxiliary substances wherever possible make them innocuous when used.
6. **Design for Energy Efficiency**
   Minimize the energy requirements of chemical processes and conduct synthetic methods at ambient temperature and pressure if possible.
7. **Use of Renewable Feedstocks**
   Use renewable raw material or feedstock rather whenever practicable.
8. **Reduce Derivatives**
   Minimize or avoid unnecessary derivatization if possible, which requires additional reagents and generate waste.

9. **Catalysis**
   Catalytic reagents are superior to stoichiometric reagents.
10. **Design for Degradation**
    Design chemical products so they break down into innocuous products that do not persist in the environment.
11. **Real-time Analysis for Pollution Prevention**
    Develop analytical methodologies needed to allow for real-time, in-process monitoring and control prior to the formation of hazardous substances.
12. **Inherently Safer Chemistry for Accident Prevention** Choose substances and the form of a substance used in a chemical process to minimize the potential for chemical accidents, including releases, explosions, and fires.

Example #8: OECD Policy Principles for Sustainable Materials Management

Source: Organisation for Economic Co-operation and Development (OECD) Environment Directorate, "Policy Report 1: Policy Principles for Sustainable Materials Management," OECD, 2010, pp. 7-8, available at http://www.oecd.org/env/resourceproductivityandwaste/46111789.pdf.

Broad Policy Principles for Sustainable Materials Management (SMM)

The working definition of Sustainable Materials Management is "an approach to promote sustainable materials use, integrating actions targeted at reducing negative environmental impacts and preserving natural capital throughout the life-cycle of materials, taking into account economic efficiency and social equity".

1. Preserve Natural Capital.

- Natural capital is the source of materials needed to support life. It is comprised of natural resource stocks (minerals and metallic ores, energy fossil fuels, soil, water and biological resources), land, atmosphere and ecosystems.
- Sustainable materials management can contribute to the preservation of natural capital. Natural capital can be preserved by increasing resource productivity, reducing material throughputs, and reusing/recycling materials to such a degree that depletion of natural capital is minimised and ecosystem services are maintained.
- 2. Design and manage materials, products and processes for safety and sustainability from a life-cycle perspective.
- The life-cycle includes extraction, processing, product design and manufacturing, transportation, product use, collection, reuse/recycling and disposal.
- The object of this principle is to maximise positive (and minimise negative) environmental, economic and social outcomes across the entire life-cycle as well as at every stage of the life-cycle.

- Increased cooperation between different actors in the life-cycle is critical, so that every actor is aware of the impacts of his actions and decisions on other phases of the life-cycle and acts accordingly.

3. Use the full diversity of policy instruments to stimulate and reinforce sustainable economic, environmental and social outcomes.

- Policy instruments that can stimulate sustainable materials management include regulations, economic incentives/disincentives, trade and innovation policies, information and voluntary partnerships.
- Policies which reinforce each other usually achieve more efficient, effective, equitable and lasting outcomes than those that do not.
- Information offering feedback on the full range of policy impacts is critical, especially so that policies can be adjusted appropriately.

4. Engage all parts of society to take active, ethically-based responsibility for achieving sustainable outcomes.

- Relevant stakeholders include individuals, the private sector, government organisations at the local, regional, national and international levels and non-governmental organisations.
- The collaboration of all stakeholders is a practical necessity to achieve SMM. Each party also has an ethical responsibility to make everyday decisions that lead to sustainable environmental, economic and social outcomes, both at home and around the globe.
- Information that is clear, useful, timely and freely available (transparent) is critical for stakeholders to be able to make decisions that lead to a green economy and a sustainable world.
- Ethically based responsibility requires each stakeholder to avoid actions that will shift negative environmental impacts to future generations and to promote actions that improve the social well-being of all people now and for those generations to come.

Example #9: Rio Declaration on Environment and Development Principles

Source: Rio Declaration on Environment and Development, 1992, www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163

The Rio Declaration adopted in 1992 by the United Nations Conference on Environment and Development contained 27 principles for sustainable development, copied below *(emphasis added).* Principles 15 and 16 (italicized) relate to the precautionary principle and producer responsibility.

Principle 1

Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle 2
States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 3
The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4
In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5
All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6
The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7
States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Principle 8
To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 9
States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10
Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, 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.

Principle 11
States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and development context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12
States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13
States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14
States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15
In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16
National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle,

bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17
Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Principle 18
States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

Principle 19
States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20
Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21
The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22
Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23
The environment and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24
Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

Principle 25
Peace, development and environmental protection are interdependent and indivisible.

Principle 26
States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27

States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

Example #10: Rio+20 "The Future We Want" Document, Chemicals and Waste Section

Source: UN General Assembly, Resolution 66/288, The Future We Want, Adopted September 2012, pp. 41-43, http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N11/476/10/PDF/N1147610.pdf?OpenElement

The section of the Rio+20 Outcomes Document, "The Future We Want," pertaining to chemicals and waste is as follows.

Chemicals and waste

213. We recognize that the sound management of chemicals is crucial for the protection of human health and the environment. We further recognize that growing global production and use of chemicals and their prevalence in the environment calls for increased international cooperation. We reaffirm our aim to achieve, by 2020, the sound management of chemicals throughout their life cycle and of hazardous waste in ways that lead to minimization of significant adverse effects on human health and the environment, as set out in the Johannesburg Plan of Implementation. We also reaffirm our commitment to an approach for the sound management of chemicals and waste, at all levels, that responds in an effective, efficient, coherent and coordinated manner to new and emerging issues and challenges, and encourage further progress across countries and regions in order to fill the gaps in the implementation of commitments.

214. We call for the effective implementation and strengthening of the Strategic Approach to International Chemicals Management57 as part of a robust, coherent, effective and efficient system for the sound management of chemicals throughout their life cycle, including to respond to emerging challenges.

215. We are deeply concerned that many countries, in particular the least developed countries, lack the capacity for sound management of chemicals and waste throughout their life cycles. Additional efforts are needed to enhance work towards strengthening capacities, including through partnerships, technical assistance and improved governance structures. We encourage countries and organizations which have made progress towards achieving the goal of sound management of chemicals by 2020 to assist other countries by sharing knowledge, experience and best practices.

216. We commend the increased coordination and cooperation among chemical and waste conventions, namely the Basel Convention, the Rotterdam Convention and the Stockholm Convention, and encourage continued enhanced coordination and cooperation among them and with the Strategic Approach to International Chemicals Management. We take note of the important role of the regional and coordinating centres of the Basel Convention and of those of the Stockholm Convention.

217. We commend existing public-private partnerships, and call for continued, new and innovative public-private partnerships among industry, governments, academia and other non-governmental stakeholders, aiming to enhance capacity and technology for environmentally sound chemicals and waste management, including for waste prevention.

218. We recognize the importance of adopting a life-cycle approach and of further development and implementation of policies for resource efficiency and environmentally sound waste management. We therefore commit to further reduce, reuse and recycle waste (the 3Rs) and to increase energy recovery from waste, with a view to managing the majority of global waste in an environmentally sound manner and, where possible, as a resource. Solid wastes, such as electronic waste and plastics, pose particular challenges, which should be addressed. We call for the development and enforcement of comprehensive national and local waste management policies, strategies, laws and regulations.

219. We urge countries and other stakeholders to take all possible measures to prevent the unsound management of hazardous wastes and their illegal dumping, particularly in countries where the capacity to deal with these wastes is limited, in a manner consistent with the obligations of countries under relevant international instruments. In this context, we welcome the relevant decisions taken at the tenth meeting of the Conference of the Parties to the Basel Convention, held in Cartagena, Colombia, from 17 to 21 October 2011.

220. We recognize the importance of science-based assessments of the risks posed by chemicals to human beings and the environment and of reducing human and environmental exposure to hazardous chemicals. We encourage the development of environmentally sound and safer alternatives to hazardous chemicals in products and processes. To this end, we encourage, inter alia, life-cycle assessment, public information, extended producer responsibility, research and development, sustainable design and knowledge-sharing, as appropriate.

221. We welcome the ongoing negotiating process on a global legally binding instrument on mercury to address the risks to human health and the environment, and call for a successful outcome to the negotiations.

222. We recognize that the phase-out of ozone-depleting substances is resulting in a rapid increase in the use and release of high global warming potential hydrofluorocarbons to the environment. We support a gradual phase-down in the consumption and production of hydrofluorocarbons.

223. We acknowledge that sustainable and adequate long-term funding is a key element for the sound management of chemicals and waste, in particular in developing countries. In this regard, we welcome the consultative process on financing options for chemicals and waste, initiated to consider the need for heightened efforts to increase the political priority accorded to sound management of chemicals and waste, and the increased need for sustainable, predictable, adequate and accessible financing for the chemicals and waste agenda. We look forward to the forthcoming proposals by the Executive Director of the United Nations Environment Programme, which will be considered by the International Conference on Chemicals Management and at the twenty-seventh

session of the Governing Council of the United Nations Environment Programme, which will be held in Nairobi, from 18 to 22 February 2013.

Example #11: UN Global Compact Principles (Excerpts)

Source: http://www.unglobalcompact.org/aboutthegc/thetenprinciples/index.html

The UN Global Compact includes ten principles in the areas of human rights, labor, the environment, and anti-corruption. The **Environmental Principles** are as follows.

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Details on Principle 7 (Precautionary Principle)

More information on each of the principles is available on the UN Global Compact website. Below is an excerpt from the detail page on Principle 7, on the precautionary principle.[2]

Global Compact Principle 7

"Businesses should support a precautionary approach to environmental challenges."

What is the precautionary approach?

Introducing the precautionary approach, Principle 15 of the 1992 Rio Declaration states that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".

Precaution involves the systematic application of risk assessment (hazard identification, hazard characterization, appraisal of exposure and risk characterization), risk management and risk communication. When there is reasonable suspicion of harm and decision-makers need to apply precaution, they have to consider the degree of uncertainty that appears from scientific evaluation. Deciding on the "acceptable" level of risk involves not only scientific-technological evaluation and economic cost-benefit analysis, but also political considerations such as acceptability to the public. From a public policy view, precaution is applied as long as scientific information is incomplete or inconclusive and the associated risk is still considered too high to be imposed on society. The level of risk considered typically relates to standards of environment, health and safety.

[2] UN Global Compact, "Global Compact Principle 7," http://www.unglobalcompact.org/aboutthegc/thetenprinciples/principle7.html