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**Discussion papers submitted by major groups****Note by the Secretariat****Addendum****Contribution by business and industry\*\*****Contents**

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\*\* The views and opinions expressed do not necessarily represent those of the United Nations.



## **I. Introduction**

1. Business is a central stakeholder and key player in bringing forward solutions across all of the issues to be considered at the eighteenth and nineteenth sessions of the Commission on Sustainable Development. The cluster of issues in this cycle have a particularly broad multisectoral and multidisciplinary significance for business and industry, and as such present challenges to identify, integrate and prioritize both past experience and necessary cooperative action. Moreover, there are connections with issues considered during previous cycles, which should be identified and explored.

## **II. Role of business and industry**

2. Business and industry support responsible approaches to the diverse areas of transport, chemicals, mining and waste management, each of which generate different environmental impacts but all of which involve many stakeholders. Sustainability in these areas requires shared responsibility among all those involved along the life cycle. The relationships among these players are complex and require the strong engagement, partnerships and contributions of all involved.

3. Responsible behaviour by companies on environmental and social matters in these (and other) areas is both an imperative of good citizenship and a matter of self-interest. Healthy and developing societies create new business opportunities and new markets. Companies need to have and can help make possible: a healthy and educated workforce; prosperous consumers; a well-functioning infrastructure; societies free from ethnic strife or conflict; sound environmental management; and enabling environments conducive to enterprise.

## **III. Role of Governments**

4. Governments can promote and enable investments in these areas by leveraging official development assistance, promoting technological cooperation and exploring innovative financing arrangements. Additional financial resources to renovate and expand transport systems and other key infrastructures are imperative. Donors, multilateral agencies and investors will all have to provide additional funds, particularly in developing countries.

5. Governments and donor agencies should assist innovative partnerships between local governments, the local and international private sector and local and international non-governmental organizations that use various sources of funding to jump-start and test shared-risk models.

## **IV. Impact of the global economic crisis**

6. The fallout from the global economic downturn has undoubtedly changed the complexion of the implementation of Agenda 21 and the Johannesburg Plan of Implementation. As financing becomes more constrained, and both public and private sector resources encounter limitations, it is more critical than ever to set priorities and determine how resources can be leveraged and most cost-effectively

deployed. At the same time, “green stimulus” and other governmental efforts to provide resources towards job creation and investment in green sectors has been promising and, from a business standpoint, we encourage countries to ensure that these efforts strengthen the entire economy, and do not choose among “winners and losers”.

7. The chemicals, transport and mining sectors each face clear challenges arising from the economic downturn, but in spite of these recent difficult circumstances, they have made solid progress towards improved performance, particularly in environmental areas. For the transport sector, climate change, energy, supply chain and security issues all have a central bearing on sustainability challenges. For mining, natural resource management and worker and community issues have been at the forefront of the agenda. In the chemicals area, sustainable chemistry, product stewardship and the ongoing broader deployment and sound practice of “Responsible Care” are the key issues. And of course, each of these sectors is a key player in numerous ways in the supply and value chains of nearly every other business sector.

8. Special purpose sectoral groups from the transport, mining and chemicals sectors, with a particular focused expertise to offer, will contribute more targeted views and input throughout the Commission on Sustainable Development cycle. More detailed views from specific sectors are presented in the annex to the present paper.

9. The eighteenth and nineteenth sessions of the Commission are particularly timely, in the light of current developments in key relevant treaties and initiatives, such as the second session of the International Conference on Chemicals Management (ICCM-2), the ninth meeting of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the simultaneous extraordinary meetings of the Conferences of the Parties to the Basel, Rotterdam and Stockholm Conventions (the three main chemicals and hazardous waste treaties). The approaching anniversaries of the United Nations Conference on Environment and Development and the World Summit on Sustainable Development suggest a particular focus on the cost-effectiveness of implementation and priorities across the broad range of Agenda 21 and the Johannesburg Plan of Implementation. The need to re-examine issues and experiences in the light of economic and political changes is real. We welcome the decision to pursue planning for an Earth Summit in 2012, and look forward to joining the dialogue.

## V. Broad approaches

10. Although the span of issues is quite broad, business and industry can point to some broad approaches that have been successful and relevant to the sectors at hand. There is no one single policy that will ensure sustainability, and markets, policy frameworks, the pace of technological innovation and consumer demand all play a role, as does implementation and the institutions and resources that support this implementation. For this reason, we wish to emphasize the importance of integrated policymaking, ongoing implementation and international cooperative approaches.

11. Restrictive trade policies that hamper innovation and market access for products that are deemed not to satisfy arbitrary criteria for their production and

components have a particularly negative impact on developing countries. These are matters of concern in the sectors under consideration, and we encourage the Commission to consider policies that work in synergy with open trade and investment to promote economic development and sustainability.

12. This paper focuses on broader multisectoral perspectives and linkages that will complement sectoral views. The annex contains specific input from several of the key sectors presented.

13. For business, the key areas for focus during this session of the Commission are:

- (a) Enabling frameworks and integrated multisectoral approaches;
- (b) Capacity-building for the implementation of eco- and resource efficiency;
- (c) Supply and value chains working together through life cycle approaches;
- (d) Stimulating and deploying innovation through partnerships.

#### **A. Enabling frameworks and integrated multisectoral approaches**

14. Although each sector is unique, and requires tailored assessment to understand its challenges and circumstances, it is also important to bear in mind that the transport, mining, chemicals and waste management sectors do not operate in a vacuum. Market (commodity, energy) and regulatory conditions matter in promoting eco- and resource efficiency in those industries.

15. Sound, enforced regulation and good governance that relies, to the extent possible, on sound science, risk management, the market and voluntary approaches that supplement legal requirements, are critical elements in enabling frameworks for sustainability. Creating an enabling environment within which enterprises of all sizes and sectors can develop, create jobs, invest and pursue technological innovation and cooperation, coupled with sound governance and policies to reduce barriers to international trade and foreign direct investment, constitutes a significant route out of poverty.

16. In this regard, we wish to underscore the importance of keeping a diverse range of energy options open — the need to maintain options open matters as society and business work in partnership to pursue more sustainable mobility options.

#### **B. Capacity-building for implementation of eco- and resource efficiency**

17. Business and industry strongly support integrated policymaking and international cooperative approaches in these areas. In this regard, they support continued business-to-business capacity-building and dialogue on eco- and resource efficiency, environmental management systems and cleaner production. Any “one size fits all” approach is incompatible with the great diversity that exists within business. Indeed, the great variety of principles and other voluntary initiatives of

individual companies attest to this diversity, are a resource of successful approaches, and should be encouraged.

18. Efficiency is a bottom line consideration that lends itself very well to the pursuit of sustainability, and which has been integrated by many companies with other considerations of cleaner production, life cycle thinking and waste minimization. These practices can make good business sense in keeping costs down and in enhancing competitiveness. Existing market drivers and competition already offer powerful incentives to improve performance in these areas and promote innovation. Technology solutions, management systems and policy frameworks exist today that support efficiency and better environmental practices, and technological innovation will add solutions over time. Both demand- and supply-oriented policies and approaches will be necessary and business will continue to play a role in both.

### **C. Supply and value chains working together through life cycle approaches**

19. Business supports global efforts to assure the proper management of materials and products throughout their life cycle, through the collective and cooperative market-based efforts of Governments, industry and consumers at each of the multiple stages: resource extraction, manufacturing, distribution, use, recycling, ultimate disposal and so on.

20. More needs to be done to communicate the business advantage of such an approach, particularly in developing countries and to small and medium-sized enterprises. The global efforts of institutions such as the United Nations Environment Programme (UNEP), the Commission and others should be aimed at capacity-building to enable each country to put in place and implement initiatives to meet obligations under relevant internationally agreed standards and address the environmental, social and economic problems they each deem to be relevant priorities for their societies and ecosystems.

### **D. Stimulating and deploying innovation through partnerships**

21. The most economically feasible ways to address the long-term sustainability challenges will require the development, commercialization and widespread dissemination of both efficient existing technologies and new, currently non-commercial technologies. Moreover, innovation will substantially improve the future performance of current and proposed technologies. Environmental management practices and systems are indispensable in taking practical steps to implement the best technologies and pursue continuous improvement.

22. Infrastructure development is a priority concrete area where public and private sectors can work together through public-private partnerships. For such partnerships to succeed:

(a) Legal frameworks should enable private entity entrance and operation in what are often State-controlled industries;

(b) The coordination of preparatory measures for efficient start-up and implementation of public-private partnerships is necessary;

(c) The allocation of risks through contractual agreements should be addressed. Project profitability is a vital prerequisite for private sector involvement, especially if the project requires long-term engagement.

## **VI. Cross-sectoral synergies with sustainable consumption and production**

23. Business and industry has worked in support of the 10-year framework of programmes for sustainable consumption and production (the Marrakech Process), through the two United Nations partner organizations (UNEP and the Department of Economic and Social Affairs), in regional meetings, with national Governments, through business groups and in partnerships with other stakeholders.

24. In our view, the 10-year framework should recognize the fundamental and diverse roles that business plays in innovation, production, distribution, transport and marketing of products and services. Business, consumers and public authorities share the responsibility for fostering environmentally and economically sound production and consumption. Business itself is not just a producer, but also a consumer.

25. Business embraces a flexible life cycle approach to sustainable consumption and production, enabled by fair, open and equitable markets at the national and international levels. From a business perspective, sustainable consumption and production relies in large part on making the market work for the environment by producing more efficiently and consuming differently, thereby generating economic prosperity, a reduced environmental footprint, and increased societal well-being.

26. Based on business experience, sustainable consumption and production efforts have been most successful when they make markets work for sustainable development, and we wish to emphasize this dynamic relationship as a core theme in the review by the Commission at its eighteenth session. While attempting to reduce the potential negative impacts of consumption and production, the sustainable consumption and production review should also address how to provide benefits such as better products at better prices to meet the needs and aspirations of consumers.

27. Sustainable consumption and production is a flexible and living concept. The eighteenth session of the Commission, in its review, should avoid a single “one size fits all” idea of either a sustainable product or of the concept as a whole. Factors such as a growing population, equity issues and the diversity of the business community, which is made up of a wide range of enterprises of many nationalities, sectors and sizes, underscore the importance of an adaptable approach.

28. Key objectives for further developing and implementing sustainable consumption and production and the 10-year framework of programmes are innovation, information and integration. Business and industry have found that sustainable consumption and production are advanced through:

(a) Developing innovative products and production methods with reduced material and energy intensity;

(b) Informing consumers about products and services in support of environmentally aware consumption choices;

(c) Integrating and mutually reinforcing programmes and policies in a wide range of markets.

29. Enacting enabling policies, and removing impeding policies, should be the overarching goal in defining and carrying out a set of frameworks in support of sustainable consumption and production. Policy and implementation frameworks should seek to take into account all stages in the life cycle of production and consumption by:

(a) Encouraging innovation and ecodesign and facilitating market introduction of environmentally preferable products, technologies and techniques;

(b) Fostering cleaner and leaner production, including industrial ecology, dematerialization, and eco-efficiency;

(c) Removing barriers to gaining market acceptance for environmentally preferable products and solutions;

(d) Facilitating environmentally aware consumption, including eco-labelling, ingredient disclosure, life cycle analysis, and comparative risk analysis;

(e) Minimizing the carbon footprint associated with post-consumer waste by deploying integrated post-consumer waste management systems and policies.

30. The consideration of policies and their implementation should also seek to understand the contribution of business. National Governments and authorities and international governmental organizations should involve business and civil society expertise in advancing sustainable consumption and production, and more specifically in developing the Marrakech Process. Business and industry plays a key role in innovation, production and marketing of products and services, and it shares with consumers and public authorities the responsibility for fostering environmentally and economically sound production and consumption.

31. In the course of the 10-year framework, business should align itself with the following principles, in support of robust marketplace responses to sustainable consumption and production by businesses, in the dual role of consumers and producers:

(a) To engage producers and consumers in creating policies and programmes to make markets work efficiently for the environment, the economy and society; and to ensure that product information, including price, reflects the shared objective of encouraging markets to adopt sustainable consumption and production patterns;

(b) To enable business, across all sectors, and by engaging supply and value chains, to contribute to sustainable consumption and production solutions through research and development, technological and commercial innovation, investment and technology diffusion, product and performance standards development, and codes of practice;

(c) To ensure that policies and programmes do not close technology options as knowledge improves and innovation creates breakthrough opportunities;

(d) To enable and implement a broad range of cooperative policies harnessing complementary regulatory, voluntary and market-based approaches;

(e) To identify and deploy targeted incentives supporting market adoption of sustainable consumption and production;

(f) To identify and remove policies that act as disincentives and impediments to market adoption of sustainable consumption and production;

(g) To mobilize global commercial markets and value chains, in compliance with trade and investment rules, and other fundamental international frameworks; and avoid barriers to trade associated with the market introduction of environmentally preferable products, technologies and techniques;

(h) To recognize and align with national priorities and circumstances while promoting international cooperation to achieve sustainable consumption and production patterns;

(i) To foster synergy with other critical priorities, notably carbon emissions, energy and material supply and use, water usage, and access for development, job creation, economic growth and other pressing challenges facing producers and consumers worldwide;

(j) To avoid duplicating or undermining existing global, regional, and national policies and programmes in advancing the 10-year framework.

32. There are numerous success stories and actions that business groups will present at the eighteenth session of the Commission: for example, the material and energy content of products has seen steady improvements over time. Key industries from a range of sectors, as well as retailers, have taken major steps forward. Recently the International Chamber of Commerce produced a new global Framework for Responsible Environmental Marketing Communications to help marketers and advertisers avoid the mistakes of vague, non-specific or misleading environmental claims. There have also been learning experiences in regulatory settings, such as in the context of the European Union, which bear closer examination, in terms of their effectiveness and impacts on other countries and markets.

33. Business and industry look forward to participating with the Commission, Governments and other major groups in contributing to a better understanding on how to continue progress in the cycle ahead, and to focus implementation and resources where they will bring the greatest benefit.



## Annex

### I. Transport

1. All modes of transport are proactively developing and implementing industry-driven solutions to improve their environmental performance generally, and to reduce their emissions in particular.
2. While technology has a key role for reducing emissions for all modes of transport, also fundamental is investment in the development of infrastructure and better use of existing infrastructure.
3. For air transport, the industry is making great advances into the opportunities offered by technology such as revolutionary new plane designs, new composite lightweight materials, radical new engine advances, and the development of sustainable biofuels for aviation. Airlines will spend \$1.5 trillion on new aircraft by 2020. Some 5,500 aircraft will be replaced by 2020, or 27 per cent of the total global fleet, resulting in a 21 per cent reduction in carbon dioxide (CO<sub>2</sub>) emissions compared with current levels.
4. Sustainable biofuel for aviation could reduce CO<sub>2</sub> emissions by 80 per cent on a full carbon life cycle basis. The focus is on biofuels sourced from second or new generation (e.g. algae, jatropha, camelina) biomass. These fuels can be produced sustainably to minimize the impact on food crops and freshwater usage.
5. More efficient operations can also save fuel and CO<sub>2</sub> emissions. “Green Teams” from the International Air Transport Association (IATA) visit airlines and advise them on fuel and emissions savings measures and best practice. Improved operational practices, including auxiliary power unit (APU) usage, more efficient flight procedures and weight reduction measures will achieve a 3 per cent reduction in emissions by 2020.
6. The road transport industry, recognizing the role that road transport plays in economic, social and environmental progress and in accordance with the International Road Transport Union (IRU) strategy for achieving sustainable development based on innovation, incentives and infrastructure (3 “i” strategy), has taken up its responsibilities by significantly reducing toxic and non-toxic emissions by up to 98 per cent, which has helped to significantly improve air quality.
7. The globalization process has led to an increase in tourism and trade and thus transport, and therefore to an increase in fuel use and, consequently, CO<sub>2</sub> emissions, but it must be recognized that road transport is the only mode of transport that can provide door-to-door service and that apart from urban distribution and short-distance road passenger transport, commercial road transport is and will remain dependent on oil, with no economically viable alternative in sight.
8. Finally, overall transport accounts for 30 per cent of CO<sub>2</sub> emissions, while the commercial road transport industry is responsible for 3 per cent of total CO<sub>2</sub> emissions. However, inadequate road infrastructure can easily triple the fuel consumption of a heavy commercial vehicle.
9. Taking into account the above, the road transport industry, represented by IRU and its member associations have in fact adopted a voluntary commitment, on the basis of innovative technologies and practices, to reduce CO<sub>2</sub> emissions by 30 per

cent by 2030 — calculated as transport performance in ton-kilometre (tkm) and passenger-kilometre (pkm) and related to the base year 2007 — through means such as:

(a) Investments in innovative engine and latest vehicle technology, which can contribute to a reduction in fuel consumption and consequently CO<sub>2</sub> emissions of more than 10 per cent;

(b) Driver training, as provided by the IRU Academy and others, which can reduce fuel consumption and consequently CO<sub>2</sub> emissions by up to 10 per cent;

(c) Innovative logistic concepts, such as intelligent transport systems (ITS) and optimized weights and dimensions of heavy commercial vehicles, which can equally reduce fuel consumption and CO<sub>2</sub> emissions by more than 10 per cent.

10. With regard to maritime transport, the international shipping industry is firmly committed to playing its part in reducing emissions of carbon dioxide and greenhouse gases. One challenge is that shipping, like all modes of transport, is a servant of world trade. The total emissions from shipping are thus determined to some extent by the expected growth of the world economy (and population) between now and 2050.

11. The consensus of opinion within the global shipping industry is that it may be possible for shipping to reduce the CO<sub>2</sub> emitted per ton of cargo transported 1 kilometre (tkm) by perhaps 15 to 20 per cent between 2007 and 2020, through a combination of technological and operational developments, as well as through the introduction of newer and bigger ships designed to the new Energy Efficiency Design Index of the International Maritime Organization (IMO). In the longer term, the shipping industry is also exploring a number of alternative fuel sources to help reduce CO<sub>2</sub> emissions. For shipping, it is important to note the significance of IMO agreement on MARPOL annex VI: Regulations for the Prevention of Air Pollution from Ships, which will regulate emissions of nitrous oxides and significantly reduce the amount of sulphur oxides and volatile organic compounds emitted by ships and hence the associated health hazards. Also important is the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, adopted at a conference in May 2009, which will help ensure that ships that have reached the end of their life are disposed of safely.

12. In sum, the transport industry as a whole is committed to a process of continuous improvement of its environmental performance.

## **II. Chemicals**

### **A. Views from the chemical industry**

13. The global chemical industry has been an active participant in international sustainable development processes since the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. The International Council of Chemical Associations (ICCA) — the worldwide voice of the industry — has held special consultative status with the Economic and Social Council since 1998, coordinating the industry's participation in major summit meetings, such as the 2002

World Summit on Sustainable Development, and at regular sessions of the Commission.

14. The chemical industry has a unique role to play in promoting sustainable development. It is committed to preserving our resources for future generations through reducing emissions, conserving energy and developing sustainable materials, technologies and business practices. In addition to being committed to achieving sustainable outcomes, the industry helps to provide sustainable development solutions for other industry sectors, including energy, information technology, construction and the waste management sector. Chemistry is also instrumental in meeting human needs, including food and clothing, housing, transport and communications.

## **B. Progress made**

15. In 2002, the chemical industry joined with other stakeholders and Governments at the World Summit on Sustainable Development in Johannesburg, South Africa, in establishing a goal that, by the year 2020, chemicals will be used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment. The industry continues to embrace this goal and work actively towards its fulfilment.

16. As part of efforts to reach the 2020 goal, ICCA participated in the formulation and adoption of the Strategic Approach to International Chemicals Management at the International Conferences on Chemicals Management in 2006 (ICCM-1) and 2009 (ICCM-2). The Strategic Approach both acknowledges the essential contribution made by chemicals to modern society and recognizes that there is room for improvement in the management and sustainable use of chemicals. The global chemicals industry is committed to the successful implementation of the Strategic Approach. Indeed, the core policy objectives of the Strategic Approach, relating to risk reduction, knowledge and information, governance, capacity-building, and illegal traffic, have directly shaped the industry's efforts to achieve the goal of the World Summit on Sustainable Development.

17. The chemical industry's efforts towards achieving the 2020 goal have been primarily directed through two industry-led initiatives. The Responsible Care Global Charter and the Global Product Strategy, introduced at ICCM-1 in 2006, reflect the industry's commitment to elevating the global standard of product safety, harmonizing the safe management of chemicals and promoting sustainable outcomes.

18. The Responsible Care Global Charter addresses sustainable development and public health issues with respect to the use of chemical products. It highlights the industry's commitment to continuous improvement and greater transparency in environmental, health and safety performance. Responsible Care, which is currently implemented by 53 associations, has been widely lauded for its achievements. Former United Nations Secretary-General Kofi Annan described it as an "inspiring model of self-regulation that other industries should consider following". The Responsible Care programme is the centrepiece of the chemical industry's global commitment to sustainability, and the Responsible Care ethic is also being spread across the supply chain through partnerships with upstream and downstream suppliers and customers. More information on Responsible Care and the

Responsible Care Global Charter can be found at [www.icca-chem.org/Home/ICCA-initiatives/Responsible-care/](http://www.icca-chem.org/Home/ICCA-initiatives/Responsible-care/).

19. The Global Product Strategy is designed to advance the industry's product stewardship performance, measure that performance and improve communication and transparency about chemical hazards, risks and appropriate safe handling along the value chain. It aims to develop tools to address public concerns regarding chemicals in commerce. It is also designed to support national, regional and international chemicals management policy expectations. The Global Product Strategy works hand-in-hand with the Responsible Care Global Charter in the improvement of product stewardship throughout the supply chain. For more information on the Global Product Strategy, visit [www.icca-chem.org/Home/ICCA-initiatives/Global-product-strategy/](http://www.icca-chem.org/Home/ICCA-initiatives/Global-product-strategy/).

20. ICCA implementation of these two programmes has resulted in measurable success across the full spectrum of policy objectives since 2006. To take just a few examples, the industry has:

- (a) Defined best practices for a base set of hazard and exposure information adequate for conducting chemical safety assessments;
- (b) Developed a set of global product stewardship guidelines for use by member associations and companies to accelerate the implementation of their chemical management programmes;
- (c) Adopted a global Responsible Care Governance Process to assure greater accountability for performance and the upholding of the Responsible Care ethic;
- (d) Provided capacity-building projects in a number of developing countries in Africa, Asia and the Pacific, Latin America, and in countries with economies in transition;
- (e) Secured support from more than 75 additional global company chief executive officers for the Responsible Care Global Charter and Global Product Strategy. These companies join the list of 79 companies represented at ICCM-1;
- (f) Extended the Responsible Care network to include the Russian Federation and other countries in Eastern Europe; established a pilot project with domestic companies in China; and is exploring an initiative in the Persian Gulf region;
- (g) Established new partnerships with Governments in developing countries;
- (h) Participated in a scientific inquiry to address new and emerging health and environmental concerns under the Long-range Research Initiative;
- (i) Reported global industry progress in a transparent manner through Responsible Care.

21. The chemical industry has also made important contributions to sustainable development in the areas of energy efficiency and reducing greenhouse gas emissions. The industry is the principal supplier of energy-efficient materials worldwide, from insulation to materials for wind and solar power. Through Responsible Care, the industry has also improved energy efficiency and reduced greenhouse gas emissions in our own operations.

22. Chemical industry technologies also make alternative energy possible, protect and clean the world's drinking water and other natural resources and help lower greenhouse gas emissions. An ICCA life cycle analysis study released in 2009 (based on independent analytical work by the consulting firm McKinsey and Company, and validated by the Öko Institute) reveals that greenhouse gas emission savings enabled by the chemical industry are more than double the industry's emissions, in other words products of the chemical industry enabled greenhouse gas savings two to three times greater than their emissions.

23. Finally, ICCA members partnered with Governments and other stakeholders during the negotiation of key international treaties such as the Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention on Prior Informed Consent, and members have played an active role in their implementation. ICCA members were also active leaders and partners in transforming the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction from concept to reality.

### **C. Constraints and obstacles**

24. ICCA commitment to enhancing the sustainability of the global chemical industry through Responsible Care and pursuing the 2020 goal of the World Summit on Sustainable Development has also identified several obstacles and constraints to achieving those objectives. Perhaps the most significant constraint is the lack of capacity in certain parts of the developing world to effectively manage chemicals. This lack of capacity can take several forms, for example lack of appropriate expertise, lack of data and scientific information, lack of resources and lack of infrastructure. ICCA is working with other Strategic Approach stakeholders to address these gaps through capacity-building and other relevant initiatives, but while important progress has been made, significant challenges remain in this area.

25. A further challenge is ensuring that mechanisms are in place to ensure effective chemicals management across the supply chain and throughout the product life cycle. This means ensuring that producers, suppliers and end-users have access to relevant product safety information and incorporate that information in their business operations. The chemical industry has made important progress in strengthening product stewardship and developing sustainable business practices through Responsible Care and the Global Product Strategy, but more remains to be done both within the industry and through additional cooperation with other industry sectors, Governments and intergovernmental and non-governmental organization stakeholders, in order to reach the 2020 goal.

### **D. Lessons learned and best practices for further implementation**

26. The chemical industry's experience in seeking to advance sustainable development and chemicals management objectives in a range of international forums has facilitated new assessments of challenges faced and possible ways to address them. For example, the capability gaps in chemicals management regimes in certain countries identified above have highlighted the need to promote transparent, science-based and cost-effective regulatory regimes around the world, leading ICCA to develop a set of principles for chemicals management systems (available from

[www.icca-chem.org/ICCADocs/2006\\_10\\_ICCA%20advocacy%20principles.pdf](http://www.icca-chem.org/ICCADocs/2006_10_ICCA%20advocacy%20principles.pdf)) based on a combination of regulation and industry-led initiatives.

27. ICCA has also developed and made publicly available a set of product stewardship guidelines (available from [www.icca-chem.org/ICCADocs/Product%20Stewardship%20Guidelines%20-%20Final.doc](http://www.icca-chem.org/ICCADocs/Product%20Stewardship%20Guidelines%20-%20Final.doc)) to help improve chemicals management and product stewardship throughout the supply chain. An important adjunct to this is putting these guidelines into action, and ICCA member companies have been active in delivering and supporting activities to build capacity in the developing world. For examples of these activities, see [www.icca-chem.org/ICCADocs/Capacity\\_Building\\_2009.pdf](http://www.icca-chem.org/ICCADocs/Capacity_Building_2009.pdf) and [www.icca-chem.org/ICCADocs/ICCA\\_Progress\\_Report09\\_final.pdf](http://www.icca-chem.org/ICCADocs/ICCA_Progress_Report09_final.pdf).

28. While significant progress has been made towards reaching the 2020 goal of the World Summit on Sustainable Development, there is still much to be done. The Strategic Approach remains the primary vehicle for efforts to reach the 2020 goal, and ICCM-2 resulted in agreement on a strengthened framework (agreement on rules of procedure, creation of a subsidiary body, a stronger role for regional processes) to help facilitate these efforts. Going forward, the chemical industry supports the further strengthening of the Strategic Approach, including through adequate resourcing, to enable it to effectively monitor progress and encourage national efforts towards reaching the 2020 goal.

## **E. Further planned actions**

29. The chemical industry is committed to continued progress on sustainable development and safer chemicals management in the coming years. The Global Product Strategy includes a 2018 target date for companies to have fully assessed the safety of their chemicals in commerce and an interim 2012 target for companies to report on and discuss their progress in making these assessments. In addition, ICCA is committed to reporting on approximately 15 to 20 more product stewardship performance metrics in the future.

30. By 2020, ICCA member companies aim to have:

(a) Established a base set of hazard and exposure information adequate for conducting safety assessments for chemicals in commerce;

(b) Enhanced the global capacity to implement safety assessment practices and safe management procedures, especially in developing countries;

(c) Shared relevant product safety information with co-producers, Governments, and the public;

(d) Worked across the value chain so that suppliers and customers can effectively evaluate the safety of their products and enhance their performance;

(e) Made product safety summaries on chemicals publicly available;

(f) Extended their monitoring and reporting structure by including additional metrics to quantitatively track progress and support continuous improvement in the sound global management of chemicals.

## **1. Views on chemical issues from the mining sector**

31. Robust and integrated chemicals management policies are a vital component of the commitment of the International Council on Mining and Metals (ICMM) to a more sustainable future. Indeed, ICMM understands that managing chemicals, including minerals and metals throughout their life cycles in a responsible way is an important aspect of sustainable development. The challenge was recognized in Agenda 21 at the United Nations Conference on Environment and Development in Rio de Janeiro and was reaffirmed in the Plan of Implementation of the World Summit on Sustainable Development.

32. The World Summit on Sustainable Development in 2002 recognized that minerals and metals are essential for modern living. Many of these chemicals perform essential roles such as providing shelter or nutrition. Indeed there are few aspects of modern society that do not rely on the use of minerals and metals to some extent.

## **2. Commitment to sound chemicals management**

33. On 11 May 2009 in Geneva, ICMM unveiled Minerals and Metals Management 2020 — an action plan for chemicals management in our sector (available from [www.icmm.com/page/13781/icmm-launches-minerals-and-metals-management-2020-strategy-](http://www.icmm.com/page/13781/icmm-launches-minerals-and-metals-management-2020-strategy-)). The plan, launched at the Second International Conference on Chemicals Management (ICCM-2), is the fulfilment of a commitment made by ICMM at ICCM-1, in Dubai in 2006, in support of implementation of the Strategic Approach. The significance of 2020 is the aspiration that chemicals, including minerals and metals, be “used and produced in ways that minimize significant adverse effects on human health and the environment by 2020” and is enshrined as the overall goal of the Strategic Approach.

34. For ICMM members, a global approach to chemicals management is essential. However, it is also important to note that the Strategic Approach must be based on a broad, life cycle approach embedded within the context of sustainable development. At the heart of Minerals and Metals Management 2020 are 23 actions, grouped into four themes which correlate with four of the overarching objectives of the Strategic Approach: risk reduction; governance; capacity-building and technical assistance; and knowledge and information. Approved by the Council of chief executive officers, the action plan requires ICMM to develop policy, deliver action and partner more broadly than ever before with others involved in the life cycle of minerals and metals. While challenging, this approach will not be unfamiliar to our members as our action plan is built upon the principles and operating platform of our Sustainable Development Framework and our Materials Stewardship programme.

35. The ICMM Sustainable Development Framework (see [www.icmm.com](http://www.icmm.com)) is based largely around tackling the issues identified in the landmark Mining, Minerals and Sustainable Development project. The Framework comprises three key components: (a) a set of 10 principles and a corresponding commitment by member companies to their implementation; (b) a commitment to report progress in the implementation of the principles and other high-level commitments in accordance with the guidelines of the Global Reporting Initiative; and (c) a commitment to third-party assurance of members’ reporting.

36. An integrated approach to the responsible production and use of the minerals and metals (chemicals) produced by ICMM member companies is an important element of the ICMM Sustainable Development Framework.

37. The materials stewardship concept involves caring for and managing the production and use of minerals and metals along the value chain to maximize net benefit, minimize losses and conserve resources to actively contribute to sustainable development. For ICMM members, materials stewardship is about:

(a) Understanding the social, environmental and economic impacts of a material as it moves through its life cycle from mining to use and through to the end of its life;

(b) Developing relationships/partnerships with other actors along the life cycle to help ensure beneficial and appropriate use of materials and to minimize or eliminate risks to human health and the environment;

(c) Taking action to ensure that, for the part of the life cycle they control, appropriate and effective stewardship activities are undertaken, and for the areas where they are not in direct control but have influence, they work with other actors in the life cycle to ensure they also do their part.

38. ICMM has published a guidance document to support the implementation of materials stewardship in the minerals and metals supply chain and is in the process of developing a complementary toolkit (available from [www.icmm.com/page/1183/maximizing-value-guidance-on-implementing-materials-stewardship-in-the-minerals-and-metals-value-chain](http://www.icmm.com/page/1183/maximizing-value-guidance-on-implementing-materials-stewardship-in-the-minerals-and-metals-value-chain)).

### **3. Chemicals management through the framework of materials stewardship**

39. The ICMM Sustainable Development Framework and the materials stewardship concept provide a robust policy platform that recognizes the specific properties and characteristics of minerals and metals as well as the important role they play in society. Chemicals management is seen as a vital component of materials stewardship and developing sound practices in this arena is a key mechanism for the industry to support sustainable development.

40. Accordingly, work is ongoing in a number of key areas outlined below.

#### *Mercury*

41. One of the principal chemicals management issues for the industry to address at the international level is the stewardship of mercury. Mercury is ubiquitous among metalliferrous sulfide ores and the processing of these ores is known to constitute one of the primary anthropogenic sources of environmental mercury pollution. Control of such emissions and the subsequent management of mercury-containing waste is therefore a key challenge for parts of the mining and metals sector.

42. ICMM has expressed support for a global strategy on mercury risk management at the level of the United Nations and has published a position statement that advocates actions for its own members under a mercury stewardship programme (available from [www.icmm.com/page/12173/icmm-commits-to-mercury-stewardship](http://www.icmm.com/page/12173/icmm-commits-to-mercury-stewardship)).



43. ICMM will enhance its contribution to the global effort by sharing information and expertise and by encouraging reciprocal public and private sector mercury management activities at the local and national levels in countries where our members have a significant presence. An example of this type of approach can be found in the support already provided by some ICMM member companies towards the implementation of low- to no-mercury technologies in the artisanal and small-scale mining sector.

44. Our members' willingness to contribute to international efforts to reduce mercury risks through the implementation of materials stewardship demonstrates that ICMM is committed to tackling health and environmental issues on a broader basis than site-specific measures, while seeking to promote sustainable uses of minerals and metals across the globe.

#### *Metals risk assessment*

45. Metals are natural inorganic components of the earth with specific chemical characteristics that often differ markedly from those of organic chemicals. Understanding these characteristics is a key factor in ensuring that potential health and environmental risks are adequately assessed and managed. With cross-commodity collaboration, ICMM is facilitating the development and sharing of leading-edge technical concepts through the risk assessment guidance for metals projects. These collaborative projects aim to provide the regulatory community at the regional and international levels with scientific and regulatory guidance on the most advanced status of environmental and human health risk assessment concepts for metals. The projects have consolidated existing experience and recent progress made with environmental risk assessment methods, concepts and methodologies for use in chemicals management programmes and standard-setting processes (available from [www.icmm.com/page/1185/metals-environmental-risk-assessment-guidance-merag](http://www.icmm.com/page/1185/metals-environmental-risk-assessment-guidance-merag) and [www.icmm.com/page/1213/health-risk-assessment-guidance-for-metals-herag](http://www.icmm.com/page/1213/health-risk-assessment-guidance-for-metals-herag)).

46. This multi-stakeholder approach to documenting the “state of the science” has facilitated broad acceptance of the outputs and the environmental guidance has for example been used by the European Commission in drafting metals-specific guidance for its new Regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). It was also recognized as a valuable source of information by the Environmental Protection Agency of the United States of America, in its Framework for Metals Risk Assessment, published in 2007.

47. The publications are considered to be “living documents” that will be supplemented and updated as new challenges emerge and the science progresses.

#### *Capacity-building for the implementation of new chemicals management systems*

48. Implementing new regulatory systems creates a significant challenge for the mining and metals industry, but offers significant opportunity for setting the right basis for future conditions for the marketing, use and control of our products, and presents challenges for industry as well as Governments. Through the collaboration of leading companies, commodity and national associations, the industry has been building capacity for implementation of two new systems in particular.

49. Those systems are the new European Regulation on the Registration, Evaluation, Authorization and Restriction of Chemical Substances and the globally harmonized system of classification and labelling (GHS) of the United Nations. The industry is preparing the necessary steps to ensure that both REACH and GHS can be implemented in a cost-efficient and timely manner. This has included a series of training seminars hosted in major cities around the world as well as the publication of specific guidance for industry. The latest guidance document published in November 2009 focuses on the classification of ores and concentrates, the raw materials for the production of minerals and metals (available from [www.icmm.com/library/oresandconcentrates](http://www.icmm.com/library/oresandconcentrates)).

50. This capacity-building is an ongoing initiative. The latest such workshop on chemicals management took place in Beijing in November 2009. This brought together industry and policymakers from within China, a country where chemicals management policy is rapidly evolving in response to domestic and international challenges.

51. The industry has also been active in dialogue with Governments and policymakers, including work at the level of the United Nations towards the development of the Strategic Approach, with the European Commission in support of technical policy development under REACH and with the United Nations as well as many national Governments regarding the globally harmonized system of classification and labelling.

#### *Life cycle thinking*

52. Life cycle approaches are vital to managing chemicals and there are important business, environmental and regulatory benefits to be gained through their use. We want to see the development of generic life cycle tools and protocols for metals which work across a number of different industries and foster acceptance that minerals and metals can contribute to sustainable products. We are aiming for common thinking among producers of metal commodities and practitioners of life cycle assessment in order to establish a basis for enhanced reputation and credibility for the relevant approaches for metals and minerals. ICMM is partnering with organizations such as UNEP and the Society of Environmental Toxicology and Chemistry (SETAC) to improve life cycle assessment methodologies.

#### *End-of-life management*

53. Metals can be recycled with no inherent degradation in properties and exploiting this is a key component of their sustainable use. For ICMM, engaging in recycling activity is an important aspect of the commitment to materials stewardship, whereby companies extend their interest beyond the plant gate and consider the whole life cycle.

54. Within the metals industry, the extent to which metals are recycled and the properties that make them recyclable are well known. However, the facts surrounding them and their recyclability are not well known or appreciated in decision-making circles, the media, and by the public in general. While current public opinion strongly favours recycling, most attention is given to paper and plastics. Possibly because data and information on the recycling of metals are lacking, society's perception can be that metals are environmentally less attractive than other materials.

55. Additionally, we recognize that wastes and by-products need to be managed in a sustainable way — the mercury management programme established by Newmont Mining is a good example of stewardship that encompasses not only products but potentially hazardous waste streams too (available from [www.beyondthemine.com/2006/?l=2&pid=5&parent=19&id=171](http://www.beyondthemine.com/2006/?l=2&pid=5&parent=19&id=171)).

56. Ultimately, we need to create increased awareness and encourage implementation of appropriate policies among member companies and other stakeholders. In all areas ICMM is working to ensure that companies, scientists and policymakers have access to the most robust and appropriate concepts and tools for assessing minerals and metals.

## **F. Contribution of metals to sustainable development**

57. Metals are well suited to the sustainable development agenda as they are durable materials that, in theory, can be recycled infinitely. Indeed, metals share many characteristics that favour their continued and expanded use by society in pursuit of sustainable development, for example:

- (a) Aluminium offers a combination of strength with exceptional lightness;
- (b) Copper is valuable for its electrical and thermal conductivity, great tensile strength and resistance to corrosion;
- (c) Zinc has a low melting point so it can easily be cast into intricate shapes. It is used in large amounts as a surface coating that protects iron and steel from corrosion and rusting;
- (d) Nickel in steel provides toughness, strength and ductility over a wide range of temperatures;
- (e) Lead is heavy, dense and very malleable; it can be used as a shield against radiation and has useful electrochemical properties;
- (f) Iron goes mainly into steel, which is used in building construction, shipbuilding and automobile bodies.

Further information is available from [www.icmm.com/page/1355/a-world-of-metals-finding-making-and-using-metals-second-edition](http://www.icmm.com/page/1355/a-world-of-metals-finding-making-and-using-metals-second-edition).

## **G. The challenge**

58. For the mining and metals industry the challenge is to ensure that materials (chemicals) are produced and used in a way that minimizes impact on the environment and society while maximizing their positive contribution. This is no longer a challenge that stops at the factory or mining site gate. As suppliers of essential materials, our industry is by its very nature tied to value chains and life cycles that we do not always control. Impacts can occur anywhere in the life cycle of a chemical or material and we therefore share the responsibility to act with others.

59. It is a commitment that starts at the highest level and permeates down to individual countries, companies and organizations. It requires robust chemicals management policies at all levels, based on sound science and supported by all stakeholders from Government to industry to civil society.

### **III. Waste management**

60. Business and industry support flexible, socially acceptable, environmentally sound and cost-effective integrated waste management, based on sound scientific data, including risk and cost-benefit analyses. In recent years, industry has made considerable efforts to improve the recyclability, design, standards and properties of its products to reduce and manage waste. Industry will continue to improve production methods and the standards of its products. Governments should assure that policies encourage industry to make further progress.

61. A sound and harmonized definition of waste/non-waste should be in use. Global trade in recyclable materials and access to recycling facilities worldwide is essential to economic development and reduction in final disposal. The expanding restrictions for transfrontier movements of secondary raw materials and measures that disrupt trade in the context of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal have hampered the essential trade of recyclable materials and the reasonable and integrated use of recycling facilities. At the same time, we have seen that sound recycling can be a component of “green economy” efforts, and as such should be encouraged.

62. One example of both the challenge and opportunity in this regard concerns “e-waste”. As rapid innovation and changing fashions make products quickly obsolete, the amount of waste electrical and electronic equipment (e-waste) is growing. Between 20 and 50 million tons of e-waste are produced worldwide every year. Business and multi-stakeholder initiatives and partnerships have been established to address these issues. One example is the Global e-Sustainability Initiative, which aims to ensure these products are disposed of responsibly and material is reused or recycled wherever possible.

63. The objective for all sectors is to move from managing risks to encouraging waste minimization, more efficient use and more extensive reuse of materials by viewing recyclable wastes, such as e-waste, as valuable resources. For example, recycling more of the materials in used equipment, including precious metals, reduces the environmental impact from its disposal and reduces the need to extract more raw materials from the ground. This, in turn, reduces the associated environmental and social impacts of mining, tying in with addressing supply chain issues.

64. In the case of information and communications technologies, the industry does not have direct control over a lot of equipment, such as computers and mobile phones, when they reach the end of their useful lives. Some companies already have take-back schemes in place, but there needs to be a wider perception and implementation of shared responsibility along the entire supply chain. For example, users should return products for recycling.

65. The Electronics-Tool for Accountable Supply Chains (E-TASC) is a web-based system for information and communications technology companies to manage their supply chains in an efficient manner. In 2008 the Global e-Sustainability Initiative developed an end-of-life management tool that will be integrated into the existing E-TASC self-assessment questionnaire for suppliers. Specific criteria cover collection, recycling, reuse and disposal. This will help the member companies of the Global e-Sustainability Initiative to ensure e-waste from their own operations is handled responsibly.

66. Waste can be an important source of energy. The practical and reasonable use of alternative and environmentally recommended fuels, for example biomass resulting from the pulp and paper industry, should not be restricted. The increased landfilling of valuable fuel resources can by no means be considered to be environmentally effective. It is important that high standards of waste management are achieved and that the range of options available is kept as wide and flexible as possible.

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