資料　１－２

喫緊の政策課題（emerging policy issue）について

1．背景

ICCM の一つの機能として、SAICM 包括的方針戦略には、協調行動を取るための優先順位についてコンセンサスを得るため、喫緊の政策課題について注目し適切な行動を呼びかける旨の記載がなされている（パラ２４）。このため、ICCM2 においても、現時点での喫緊の政策課題を抽出し、今後実施すべき行動を検討することが企図されている。

喫緊の政策課題の選択については、これまで、各国からの提出文書をもとに、法的・技術的事項公開作業グループ（2008 年 10 月）や、事務局及び地域フォーカルポイント等との間で電話会議によって議論されてきた。

これらの議論により、「塗料中の鉛」、「ナノマテリアル」、「製品中の化学物質」、「E-Waste」の 4 つの政策課題をとりあげることとされ、これらについて ICCM2 において議論される予定。

2．準備状況等

（１）4 つの課題

4 つの課題については、それぞれ資料作成を担当する者（ファシリテーター）が事務局より指名されており、ファシリテーターは、「proposed action」及び「cooperative action」に関するドキュメントを作成、各国に対してコメント照会を行っている（別添 1～5 参照）。

各政策課題のファシリテーター、〆切りについては下記の通り。

なお、塗料中の鉛については、一次コメントを参照した二次コメント照会にかけられている。それぞれの政策課題について、ファシリテーターによって纏められた文書が 3 月 15 日までに SAICM 事務局に ICCM の文書として提出される予定。

	ファシリテーター	コメント締切
塗料中の鉛	Ms. Judy Stober　(IFCS) 及び Ms. Maria Doa (アメリカ)	2 月 18 日
ナノマテリアル	Mr. Georg Karlaganis　(スイス)、 及び Mr. Jim Wilis (アメリカ)	2 月 20 日
製品中の化学物質	Ms. Johanna Lissinger Peitz　(スウェーデン)	2 月 25 日
E-Waste	Mr. Oladele Osibanjo　(ナイジェリア)	2 月 25 日

（２）課題選定手法

課題の選定手法については既存の決定がなかったため、今次会合においては事務局が公開作業グループ会合及び電話会議等を通じて各国の意見を聴いて決定するという手法が採られたが、将来の選定、レビュー及び優先付けについて、今次会合で検討することが企図されている。

别添 1

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Strategic Approach to International Chemicals Management

International Conference on Chemicals Management
Second session
Geneva, 11–15 May 2009

Item 4 (f) of the provisional agenda*

Implementation of the Strategic Approach to International Chemicals Management: emerging policy issues

Emerging policy issues

Note by the Secretariat

Executive summary

1. One of the functions of the International Conference on Chemicals Management set out in paragraph 24 of the Overarching Policy Strategy of the Strategic Approach to International Chemicals Management is "to focus attention and call for appropriate action on emerging policy issues as they arise and to forge consensus on priorities for cooperative action".

2. In accordance with that function the Conference will discuss emerging policy issues at its second session. The particular issues to be discussed were identified through consultations aimed at narrowing the great number of issues that could be considered to a manageable number. To begin with, in response to an invitation from the secretariat 21 stakeholders suggested 36 issues for discussion by the Conference. A summary of those issues was then reviewed at informal discussions held in Rome on 23 and 24 October 2008. A set of follow-up actions to prepare for the current session of the Conference was undertaken as proposed in Rome. Those actions included screening the suggested issues in a transparent manner according to agreed criteria and consulting with regional focal points, Governments and non-governmental and intergovernmental organizations to determine which issues would be considered at the current session.

3. As a result of this process four issues have been identified and additional preparatory work has been carried out to enable their detailed consideration at the current session. The issues are "nanotechnology and manufactured nanomaterials", "chemicals in products", "electronic waste", and "lead in paint". Other emerging policy issues from among those first suggested will be the subject of side-events and high-level round table discussions at the current session. Modalities for addressing the remaining suggested issues could be part of a longer-term procedure that the Conference may wish to establish.

* SAICM/ICCM.2/1.

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4. The Conference may wish:

(a) To review each of the four emerging policy issues prepared for detailed consideration at the current session and to consider calling for possible cooperative action on each issue, as appropriate;

(b) To decide on the future procedure for the nomination, review and prioritization of emerging policy issues, taking into account experience in preparing such issues for discussion at the current session.

I. Background

5. One of the functions of the International Conference on Chemicals Management set out in paragraph 24 of the Overarching Policy Strategy of the Strategic Approach is "to focus attention and call for appropriate action on emerging policy issues as they arise and to forge consensus on priorities for cooperative action". Paragraphs 14 (g) and 15 (g) of the Overarching Policy Strategy call, respectively, for new and emerging issues of global concern to be sufficiently addressed by means of appropriate mechanisms and for an acceleration of the pace of scientific research on identifying and assessing the effects of chemicals on human beings and the environment, including emerging issues.

6. In early 2008 an informal "friends of the secretariat" planning group was convened to assist with preparations for the second session of the Conference. The group comprised regional focal points and representatives of Governments, non-governmental organizations and intergovernmental organizations. Following consultations with the group the secretariat prepared a short questionnaire as a means for Strategic Approach stakeholders to propose "emerging policy issues" for consideration by the Conference at the current session. The questionnaire was brought to the attention of stakeholders by e-mail, through discussions at regional meetings and by publication on the Strategic Approach website. Stakeholders were asked to submit proposed emerging issues by 31 August 2008.

7. Twenty-one stakeholders submitted 36 emerging policy issues for consideration. Annex I to the present document contains a list of those issues. An overview and summary of the submissions was prepared by the secretariat and was then reviewed by participants in informal discussions held in Rome on 23 and 24 October 2008. These informal discussions also included the preliminary consideration of a procedure for preparing emerging policy issues for discussion at future sessions of the Conference.

8. Participants in the informal discussions proposed a number of follow-up actions to prepare for the consideration of emerging policy issues at the current session. This included a set of immediate actions to be completed by the end of 2008. Because the bureau of the Open-ended Legal and Technical Working Group had no mandate beyond the conclusion of its first meeting (held in Rome from 21 to 24 October 2008) it could not play a role in the final preparations for the second session of the Conference and the secretariat was left to determine the most efficient way of consulting with stakeholders. The secretariat decided to continue to do so through consultations with the friends of the secretariat group. The group held teleconferences on 27 November and 12 December 2008 and 14 January 2009. The secretariat then prepared the present document taking into account those consultations.

9. Annex II to the present document provides a summary of the preparatory work undertaken in advance of the current session, including the preparation and review of an annotated list of emerging policy issues suggested by stakeholders. In accordance with the guidance provided by the friends of the secretariat group, proponents and other interested stakeholders have assisted the secretariat in preparing information documents on the following four emerging policy issues for detailed consideration at the current session of the Conference: nanotechnology and manufactured nanomaterials; chemicals in products; electronic waste; and lead in paints. Proposals for cooperative action on each emerging policy issue have been developed for consideration. A technical briefing will take place on Sunday, 10 May 2009, from 9.30 a.m. to 1 p.m. to introduce these four emerging policy issues to participants at the current session.

II. Emerging policy issues for detailed consideration

10. The participants in the informal discussions that took place in Rome inn October 2008 agreed that an emerging policy issue could be defined as "an issue involving the production, distribution and use of chemicals which has not yet been generally recognized or sufficiently addressed but which may have significant adverse effects on human beings and/or the environment". The Conference may wish to adopt this definition in its consideration of emerging policy issues.

11. The four emerging policy issues that have been identified for detailed consideration at the second session of the Conference are summarized as follows:

(a) **Nanotechnology and manufactured nanomaterials**. Matters encompassed by this issue were suggested for discussion by the Intergovernmental Forum on Chemical Safety (IFCS) ("nanotechnology and manufactured nanomaterials"), the Inter-Organization Programme for the Sound Management of Chemicals (IOMC) ("manufactured nanomaterials") and the Government of Japan ("sound management of specific substances - nanomaterials"). Information about how this emerging policy issue meets the selection criteria developed during the informal discussions in Rome is contained in document SAICM/ICCM2/INF/34. The proposed cooperative actions that are suggested for consideration by the Conference at the current session are described in document SAICM/ICCM2/10/Add.1. In its submission IFCS referred to the new challenges, especially in respect of health and safety, posed by rapidly emerging nanotechnological approaches and the need to understand, avoid, reduce and manage risks. IOMC referred to the challenges of assessing the safety of nanomaterials, the need to review the methods used for testing and assessing safety and the cooperative international work being undertaken in this regard. The Government of Japan referred to the wide use of nanomaterials and the lack of the full assessment of their health and environmental hazards;

(b) **Chemicals in products**. Matters encompassed by this issue were suggested for discussion by the Presidency of the Council of the European Union ("information needs on chemicals in products"), the Government of Japan ("chemicals in products") and IFCS ("toys and chemicals safety". Information about how this emerging policy issue meets the selection criteria developed during the informal discussions in Rome is contained in document SAICM/ICCM2/INF/35. The proposed cooperative actions that are suggested for consideration by the Conference at the current session are described in SAICM/ICCM2/10/Add.1. In its submission, the European Union referred to the growing understanding of the spread of and potential exposure to chemicals from articles (products) such as computers, textiles, toys and costume jewellery, the health risks to end users and the economic risks for producers. The Government of Japan said that there was a need for the sound management of chemicals in products through, for example, the recovery of chemicals from products in the waste recycling system. IFCS pointed to possible adverse health effects for children of chemicals in toys as a result of the toys' intended use or foreseeable misuse, the increased vulnerability of children to chemical harm and the actions agreed by IFCS at its fifth session, which was held in Budapest from 25 to 29 September 2006;

(c) **Electronic waste**. Electronic waste was suggested for discussion by the African region at its second regional meeting on the Strategic Approach, held in Dar es Salaam on 16 and 17 July 2008, and by the Government of Peru. Information about how this emerging policy issue meets the selection criteria developed during the informal discussions in Rome is contained in document SAICM/ICCM2/INF/36. The proposed cooperative actions that are suggested for consideration by the Conference at the current session are described in document SAICM/ICCM2/10/Add.1. The problem described by the African region was a lack of capacity for the environmentally sound management of electronic wastes. This lack of capacity meant that toxic chemicals such as heavy metals and brominated flame retardants were being released into the environment and posing a threat to human health in the region. The Government of Peru said a large volume of electronic waste, mainly computers and televisions under the designation of second-hand products, were entering the country from all parts of the world;

(d) **Lead in paint**. Matters encompassed by this issue were suggested for discussion by the non-governmental organization Toxics Link ("continuing use of lead in paints in developing countries and its eventual phase-out"), IFCS ("substitutions and alternatives") and the United States of America ("enhancing capacity on lead and cadmium management through cooperative action"). Information about how this emerging policy issue meets the selection criteria developed during the informal discussions in Rome is contained in document SAICM/ICCM2/INF/38. The proposed cooperative actions that are suggested for consideration by the Conference at the current session are described in document SAICM/ICCM2/10/Add.1. In its submission, Toxics Link described lead in paints as the biggest source of lead exposure to children after exposure from gasoline and pointed to a lack of necessary legislation in most developing countries to regulate the use of lead in paints. In its submission IFCS provided information on a resolution on eliminating lead from paints adopted by the Forum at its sixth session, which was held in Dakar from 15 to 19 September 2008. IFCS also submitted a proposal for a global partnership to promote the phase-out of lead in paint in accordance with the Johannesburg Plan of Implementation of the World Summit on Sustainable Development developed by an ad hoc working group of the IFCS Forum Standing Committee. It is set out in document SAICM/ICCM2/INF/29. The United States drew attention to actions that could be replicated to

enhance the capacity of developing countries in particular to reduce the environmental and health effects of lead.

12. It is recognized that some stakeholders wish to present additional emerging issues for consideration during the current session. To accommodate this wish a programme of side events at which such issues will be featured has been planned. Stakeholders are encouraged to participate in the side-events. Other issues will be taken up during the high-level round table discussions that will take place during the session. The side events and round-table discussions are intended to foster an interactive exchange of information and discussion on these issues. Issues suggested for discussion during the current session but not addressed in detail could also be considered in the prioritization process during the next intersessional period.

III. Proposal for future modalities for considering emerging policy issues

13. It was concluded during the informal discussions held in Rome on 23 and 24 October 2008 that during the current session the Conference should consider the adoption of a longer-term procedure for carrying out its functions with regard to emerging policy issues. The secretariat was asked to prepare a draft proposal in this regard in consultation with regional focal points and other stakeholders, taking intoaccount the informal discussions in Rome and experience in the application of the procedure agreed for use in the lead-up to the second session of the Conference. It is anticipated that the Conference may wish to consider three to five emerging policy issues at each of its future sessions.

14. The secretariat proposes the following four-step procedure for the nomination, review and prioritization of emerging policy issues: a call for nominations; submission of initial information by proponents; review and screening of nominations by the secretariat; and prioritization through consultation and advice from stakeholders and experts. The preparation of Conference documents for selected emerging policy issues would be part of the work of preparing for each session of the Conference itself.

A. Call for nominations

15. Given that the nature of emerging policy issues will vary according to the perspectives and needs of different stakeholders, any process for nominating emerging policy issues should be an open one, in which any Strategic Approach stakeholder is free to participate. The nomination procedure would be published on the Strategic Approach website. To promote communication at the national level, nominations should be copied to Strategic Approach focal points. Because emerging policy issues will arise and evolve over time, nominations will be possible at any point but would be formally invited from stakeholders at specific periodic intervals, for example, once in the lead-up to each session of the Conference. This periodic call for the nomination of issues would serve to encourage the systematic monitoring, review and regular discussion of emerging policy issues among Strategic Approach stakeholders. A deadline for receipt of nominations would be assigned to allow sufficient time for subsequent steps in the procedure. Given the steps that follow nominations would need to be submitted between 9 and 12 months in advance of the sessions of the Conference at which they would be considered.

B. Submission of initial information by proponents

16. In nominating an emerging policy issue for consideration by the Conference, a stakeholder would be required to complete a questionnaire incorporating the elements used prior to the informal discussions held in Rome in October 2008 and reflecting the screening criteria developed in those discussions. The initial information sought by the questionnaire would include:

(a) Why a given issue is considered to be an emerging policy issue, in particular how it is consistent with the proposed definition of an emerging policy issue referred to above;

(b) How the issue meets the selection criteria listed under subchapter III C, below;

(c) A description of the proposed cooperative action to be requested, including a rationale. Proponents would be encouraged to consider a wide range of options for cooperative actions, which would include identification of any tools, institutions and other mechanisms and resources that could support the proposed action.

C. Review and screening of nominations by the secretariat

17. Review and screening of the nominations according to agreed criteria would assist in sorting the nominations and assessing their relevance to the objectives of the Strategic Approach. This could be undertaken by the secretariat using readily available information. Proponents could be contacted to provide any missing information. The Conference might wish to adopt the following criteria, modified as it deems appropriate:

(a) The magnitude of the problem and its impact on human health or the environment, taking into account vulnerable subpopulations and any toxicological and exposure data gaps;

(b) The extent to which the issue is being addressed by other bodies;

(c) The level of knowledge about the issue;

(d) The extent to which the issue is of a cross-cutting nature;

(e) The feasibility of the action proposed;

(f) The relevance of the issue to a broad number of countries or regions, and stakeholders, in particular developing countries and countries with economies in transition.

18. The results of the secretariat's screening would be set out in a list of submissions, annotated with information that has been provided on each of the criteria. Similar issues would be grouped or clustered so that as far as possible similar issues could be considered in thematic groups. The list would be made publicly available and other interested stakeholders would thereby invited be invited to provide relevant information.

D. Prioritization through consultation and advice from stakeholders

19. Following the nomination of emerging policy issues and screening and review by the secretariat, it could be beneficial to engage formally the full range of stakeholders in prioritizing issues for detailed consideration by the Conference at its next session and preparing additional information and proposals for action on those issues selected for further elaboration. Such consultation could be pursued though the bureau of the Conference, regional meetings, working groups on specific issues, workshops and advisory groups, engagement of the scientific community and the work of the secretariat and consultants. The optimal mix of such approaches would depend to some extent on what means the Conference determines are needed to carry forward its overall intersessional activities.

20. Because the Conference will perform its function in relation to emerging policy issues for the first time at the current session, there are no precedents for the types of action which the Conference might call for in relation to priorities for cooperative action, once agreed. Taking into account the full range of cooperative actions possible, however, such responses could entail the Conference simply noting and disseminating the agreed priorities, for example through the secretariat's clearinghouse function. The Conference might also consider taking more active measures, such as non-binding recommendations and requests for action addressed to the governing bodies of intergovernmental organizations, Governments, scientific bodies and civil society stakeholders, or the initiation of follow-up work under the auspices of the Conference itself through intersessional working groups, regional meetings and training sessions, a subsidiary body, the secretariat or other mechanisms. Alternatively Governments, civil society and industry could use sessions of the Conference as opportunities to make specific commitments to undertake intersessional workshops, establish partnerships and so on. In some cases, proposed actions might also be relevant to the Global Plan of Action of the Strategic Approach.

Annex I

List of emerging policy issues suggested by Governments and organizations for consideration by the International Conference on Chemicals Management at its second session

Governments

1. Biofuels (the African region)
2. Electronic waste (the African region)
3. Climate change (the African region)
4. Waste containing heavy metals (the African region)
5. Regional coordination on prior informed consent for import and export of hazardous chemicals and waste (Bahrain)
6. Persistent, bioaccumulative and toxic (PBT) substances risk management (Belarus)
7. Management of obsolete chemicals (Burkina Faso)
8. Information need on chemicals in products (France, as Presidency of the European Union)
9. Safety assessment of existing chemicals (Japan)
10. Sharing of chemical safety data (Japan)
11. Chemicals in products (Japan)
12. Sound management of specific substances; nanomaterials; mercury (Japan),
13. Hotspots caused by temporary storage of hexachlorocylohexane (HCH) isomers in the organic chemical plant dump site (the Former Yugoslav Republic of Macedonia)
14. Electronic wastes (Peru)
15. Chemicals management challenges in Samoa (awareness/education, obsolete chemicals, labelling) (Samoa)
16. Utilization (neutralization) of obsolete pesticides (Ukraine)
17. Enhancing capacity of lead and cadmium through cooperative action (the United States)
18. Managing perfluorinated chemicals and making the transition to safer alternatives (the United States)

Intergovernmental organizations and nongovernmental organizations and groups

19. List of topics identified by the Intergovernmental Forum on Chemical Safety (IFCS) at its fifth session
20. Applying precaution in the context of chemical safety (IFCS)
21. Heavy metals: need for further global action? (IFCS)
22. Toys and chemical safety (IFCS)
23. Nanotechnology and manufactured nanomaterials (IFCS)
24. Substitution and alternatives (IFCS)
25. International transport of lead and cadmium via trade: an international concern? (IFCS)
26. Ecologically-based integrated pest management and integrated vector management: key elements of pesticide risk reduction strategies (IFCS)
27. Climate change and the sound management of chemicals (IFCS)
28. Safety of manufactured nanomaterials (IOMC)
29. Contribution to the discussion of candidate new and emerging policy issues to be addressed at the second session of the Conference (United Nations Environment Programme)
30. Additional roles and responsibilities of the health sector owing to the increased production and use of chemicals in developing countries and countries with economies in transition (World Health Organization)
31. Perfluorooctanoic acid (PFOA) emission and release reduction (Business and Industry Advisory Committee of the Organisation for Economic Cooperation and Development)
32. Strengthening national capacity for designing a national pollutant and release transfer register to support SAICM implementation in Georgia (Caucasus Environmental NGO Network),
33. Risk assessment and reduction for priority chemicals (EcoTox Environment and Health NGO)
34. Promoting comprehensible chemicals information for all stakeholders through comprehensibility testing initiatives – the right to comprehend (Occupational and Environmental Health Research Unit of the University of Cape Town,

35. Continuing use of lead in paints in developing countries and its eventual phase-out (Toxics Link)
36. Control and monitoring of risks to children exposed to chemicals and child labour (Zambia Consumer Association)

Annex II

Summary of work undertaken on emerging policy issues in preparation for the second session of the Conference

I. Overview of submissions received

1. In preparing for the Conference's consideration of emerging policy issues at its second session the secretariat developed a short questionnaire as a means for Strategic Approach stakeholders to propose "emerging policy issues" for consideration by the Conference. A copy of the questionnaire may be found on the Strategic Approach web site (www.saicm.org). Stakeholders were invited to submit proposed issues by 31 August 2008.

2. Submissions on emerging policy issues were received from the following 21 stakeholders:

(a) The African region, from its second regional meeting on the Strategic Approach, held in Dar es Salaam on 16 and 17 July 2008;

(b) The Governments of Bahrain, Belarus, Burkina Faso, France (as Presidency of the European Union), Japan, the Former Yugoslav Republic of Macedonia, Peru, Samoa, Ukraine and the United States of America;

(c) The Intergovernmental Forum on Chemical Safety;

(d) The Inter-Organization Programme for the Sound Management of Chemicals (IOMC);

(e) Two IOMC participating organizations, the United Nations Environment Programme and the World Health Organization;

(f) Six non-governmental organizations and groups: the Business and Industry Advisory Committee to the Organisation for Economic Cooperation and Development; the Caucasus Environmental NGO Network; EcoTox Environment and Health NGO; the Occupational and Environmental Health Research Unit of the University of Cape Town, South Africa; Toxics Link; and the Zambia Consumer Association.

3. The submissions provide short descriptions of the emerging policy issues, relevant actions undertaken, reasons why cooperative actions are warranted and proposed cooperative action.

4. The issues described reflect the breadth of the matters that might fall within the definition of emerging policy issue agreed during the informal discussions in Rome and suggested for consideration by the Conference at the current session. A number of submissions focus on specific chemicals such as perfluorinated chemicals; chemicals with specific hazard and risk characteristics such as persistent, bioaccumulative or toxic chemicals; and chemicals which pose specific risks at different stages in their life cycles such as chemicals in products, heavy metals in waste and lead in paint. Other submissions draw attention to specific chemicals management matters, including chemicals management challenges in Samoa; regional coordination on prior informed consent for the import and export of hazardous waste; and the need to strengthen the capacity of the health sector.

5. Actions undertaken depend on the issue described and include local and national clean-up operations; national measures such as legislative controls; the development of guidance; the preparation of inventories and national plans; the development of scientific criteria and testing strategies to identify specific hazardous properties; information exchange; regional actions supported by political commitments and goals; international workshops; the development of voluntary actions such as stewardship programmes within industry; actions by intergovernmental forums including political statements and commitments for action; and the initiation of cooperative international work programmes.

6. The reasons put forward to justify cooperative action included the magnitude and importance of a particular problem, such as risks to vulnerable groups including children; a lack of international cooperation on issues which are commonly shared; transboundary effects beyond one particular country or region; the need to agree on how to implement agreed international policies and legal instruments (including to strengthen their implementation and effectiveness); the need to accelerate risk reduction by implementing alternative risk management strategies; an increasing use of new technologies; use of

novel chemical materials for which current risk assessment and management approaches might not be adequate; and the impact on human health of changing patterns in the development and use of chemicals.

7. The submissions also provide a short description of the proposed cooperative action and options to such action. Some stakeholders propose action at the regional level, while others request information exchange, call for the development of specific types of information and guidance or ask that action be taken to strengthen capacities and mobilize resources. In many cases the submissions refer to a set or number of interrelated cooperative actions. In several cases the submissions were incomplete in this area.

II. Review and screening of submissions

A. Screening against the selection criteria developed during the informal discussions

8. In order to provide a basis for further considering the priority of each nominated emerging policy issue, the following criteria were developed during the informal discussions held in Rome:

(a) The magnitude of the problem and its impact on human health and the environment, taking into account vulnerable subpopulations and any toxicological and exposure data gaps;

(b) The extent to which the issue is being addressed by other bodies;

(c) The level of knowledge about the issue;

(d) The extent to which the issue is of a cross-cutting nature;

(e) The feasibility of the action proposed;

(f) The relevance of the issue to a broad number of countries, regions and stakeholders, in particular developing countries and countries with economies in transition

B. Preparation of an annotated list of submissions

9. As one of the immediate follow-up actions that it took following the informal discussions in Rome, the secretariat prepared an annotated list of the emerging policy issues that had been suggested by stakeholders. The list is contained in document SAICM/ICCM.2/INF/33 and is also available on the Strategic Approach website (www.saicm.org). A draft of the list was reviewed by the friends of the secretariat group and supplementary information and footnotes were later added to reflect teleconferences held on 27 November and 12 December 2008.

10. The list organizes and presents the suggested emerging policy issues into 22 groups so that similar issues can be considered together. For example, three of the four emerging policy issues identified for the present current can be associated with more than one original proponent. Each submission is annotated with a short note providing readily available information that may be relevant to further consideration of the issue. In this way it is intended that the annotated list convey in a transparent manner the information relevant for the further review of submissions.

11. The annotated list of submissions on emerging policy issues was used during consultations with the friends of the secretariat group as a tool for screening the submissions against the agreed criteria.

C. Experience in using the selection criteria

12. Some of the experience obtained from use of the annotated list may be relevant to the use of the selection criteria in the future. Endnotes have been included in the annotated list to record this experience.

13. It was not possible to apply two of the criteria fully at the initial screening stage, namely, criterion (a), “the extent addressed by other bodies”, and criterion (c), “the feasibility of action proposed”. In the case of criterion (a) it was possible to identify existing work that might be relevant but it was not possible to complete an assessment of whether that work sufficiently addressed the submitted issue. Similarly for criterion (f), while actions might have been proposed at the time of the initial submission, they were often incompletely developed. In addition while a sense of the relevance of the proposed action to the functions of the Conference could be obtained, the practicality of the actions, the resource and other needs and the interests of potential partners could not be fully assessed. For both criteria, further consultation and advice from stakeholders is envisaged after the initial screening step. In

the future process proposed by the secretariat such considerations are incorporated into the fourth step, "prioritization through consultation and advice from stakeholders.

D. Identifying the issues for detailed consideration

14 The friends of the secretariat group held two teleconferences, on 27 November and 12 December 2008, to review the annotated list of submissions prepared by the secretariat and to share with the secretariat its views on the emerging policy issues for detailed consideration at the current session of the Conference.

15. Members of the group expressed views as to how each issue met the selection criteria. Members from the African region explained that they wanted the annotated list to reflect the priorities assigned to certain issues by the regions (as agreed at regional meetings, as in the case of the second African regional meeting). It was also said the issues selected should convey to the Conference the perspectives of both developed and developing countries as to what constituted an emerging policy issue. For purposes of applying the definition of emerging policy issue and the proposed screening criteria it was agreed that the global chemicals community was not fully aware of the issue of "nanotechnology and manufactured nanomaterials", that the issue of "chemicals in products" was not yet being addressed internationally and that the issues of "electronic waste" and "lead in paints" were of particular and immediate concern to developing countries.

III. Additional information on the issues proposed for consideration at the second session of the Conference

16. For each of the four emerging policy issues proposed for detailed consideration at the current session, an information document is available that provides relevant background information including an assessment of the issue against the selection criteria. In addition to providing information on the four issues, these documents may also provide an opportunity to review the practicality of the selection criteria that have been used thus far.

別添 2

DRAFT FOR COMMENT BY 18 FEBRUARY 2009

Draft document setting out proposed action and potential cooperative actions on lead in paints

Proposed action

Develop a Global Partnership to Implement Paragraph 57 of the WSSD POI, focusing on the phase-out of lead in paint. The partnership would use as models the partnership that was formed during WSSD to promote clean fuels and vehicles, which has been very effective and the UNEP Global Mercury[i] which is moving forward effectively. The objectives would be to phase out lead in paints.

Potential cooperative actions

Several actions proposed to address lead in paint include:

- Information exchange on lead levels in paints in various countries
- Information exchange on regulations and legislations and their nature on lead concentrations in paints allowed in various countries.
- Discussion on further steps to phase out lead from paints.
- Global discussion and concrete actions to phase out lead from paints from world
- Information (labeling) system relating to the lead content of paint

Given that the problem of lead in paint includes significant exposure from legacy use of lead in paint, other potential actions should be considered. These include:

- Information exchange on safe methods to remove lead paint from housing and other buildings
- Information exchange on safe methods to conduct repair or renovation activities on in homes and other buildings that contain lead paint to minimize exposures to residents and releases to the environment which may contribute to future exposures.
- Discussion on steps to reach health providers, caretakers and parents on how to minimize children's exposure to lead from lead paint.
- Build capacity to help various officials across ministries to test for lead in paint and enforce measures related to lead in paint.

At the request of Forum VI, the IFCS has prepared and submitted for the consideration of ICCM a draft resolution to establish a global partnership to phase out the use of lead in paints under the auspices of the ICCM. The draft resolution includes proposed terms of reference for the partnership. (Annex)

These actions would further the SAICM objectives of risk reduction, knowledge and information, governance, capacity building and technical cooperation.

Annex

Draft resolution submitted by an ad hoc working group of the Forum Standing Committee of the Intergovernmental Forum on Chemical Safety for possible consideration and adoption by the International Conference on Chemicals Management at its second session

Global Partnership to promote the implementation of the measures contained in paragraph 57 of the Johannesburg Plan of Implementation of the World Summit on Sustainable Development: Phasing Out of Use of Lead in Paints

The Conference,

Considering the World Summit on Sustainable Development (WSSD) decisions to protect children's health from exposure to lead in Paragraph 57 of the WSSD Plan of Implementation (POI) called for: *""Phase out lead in lead-based paints and in other sources of human exposure, work to prevent, in particular, children's exposure to lead and strengthen monitoring and surveillance efforts and the treatment of lead poisoning*,"

Acknowledging the Dakar Resolution for Eliminating Lead in Paints adopted by the sixth session of the Intergovernmental Forum on Chemical Safety;

Recognizing the progress being made towards achieving a global phase out of lead in automotive fuels by the Partnership for Clean Fuels and Vehicles;

Recalling our commitment made in Dubai to work towards closing the gaps and addressing the discrepancies in the capacity to achieve sustainable chemicals management between developed countries on the one hand and developing countries and countries with economies in transition on the other by addressing the special needs of the latter and strengthening their capacities for the sound management of chemicals and the development of safer alternative products and processes, including non-chemical alternatives, through partnerships, technical support and financial assistance.

Further recalling the Strategic Approach Overarching Policy Strategy objective "to promote and support the development and implementation of, and further innovation in, environmentally sound and safer alternatives, including cleaner production, informed substitution of chemicals of particular concern and non-chemical alternatives";

1. **Agrees** that a global partnership to support concerted action to promote the phasing out of use of lead in paints will be an important contribution to the implementation of the World Summit on Sustainable Development paragraph 57 and to the Strategic Approach;

2. **Decides** to establish a Global Partnership to promote Phasing Out of Use of Lead in Paints under the auspices of the International Conference on Chemicals

Management and to adopt as a basis for its work the terms of reference as given in the annex;

3. **Encourages** governments, regional economic integration organizations, intergovernmental organizations and other international organizations, industry or business organizations, non-governmental/civil society organizations and academic institutions to participate in the Global Partnership;

4. **Recognizes** that achieving the goals and objectives of the Global Partnership will require sufficient human, financial and in-kind resources, urges all Governments, intergovernmental organizations, and non-governmental organizations, including from the private sector, to provide such resources on a voluntary basis.

5. **Requests** the Strategic Approach secretariat, within available resources, to service the Global Partnership;

6. **Invites** the Global Partnership to report on progress in its work to future sessions of the Conference.

Annex to Draft resolution submitted by an ad hoc working group of the Forum Standing Committee of the Intergovernmental Forum on Chemical Safety for possible consideration and adoption by the International Conference on Chemicals Management at its second session

Terms of Reference

Global Partnership to promote the implementation of the measures contained in paragraph 57 of the Johannesburg Plan of Implementation of the World Summit on Sustainable Development: Phasing Out of Use of Lead in Paints

The Terms of Reference that follow are for a Global Partnership to Phase-Out Use of Lead in Paints to support implementation of paragraph 57 of the Johannesburg World Summit on Sustainable Development (WSSD) Plan of Implementation (POI)[1], which states:

> "Phase out lead in lead-based paints and in other sources of human exposure, work to prevent, in particular, children's exposure to lead and strengthen monitoring and surveillance efforts and the treatment of lead poisoning."

The Global Partnership is established under the auspices of the International Conference on Chemicals Management (ICCM).

1. Overall Goal

The overall Goal of the partnership is to promote the implementation of Paragraph 57 of the WSSD Plan of Implementation through the prevention of children's exposure to lead via paints containing lead.

[1] WSSD POI at: http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIChapter6.htm

2. Objectives

The objectives of the Global Partnership are to phase-out the manufacture and sale of paints containing lead and the eventual elimination of risks from paint containing lead which contribute to childhood lead exposure.

Specific objectives are:

- To raise awareness of government authorities and regulators, private industry, manufacturers, consumers, and health care providers on the toxicity of lead in paints and the availability of technically superior and safer alternatives;
- To catalyse the design and implementation of appropriate prevention-based programmes to reduce and eliminate risks from the use of lead in paint;
- To provide assistance to paint manufacturers that still produce and market paints containing lead to enable them to phase-out lead from their paints;
- To promote the establishment of appropriate national regulatory frameworks to restrict the manufacture, import, sale and use of paints containing lead for applications likely to contribute to childhood lead exposure;
- Promote international third-party certification of new paint products to help consumers recognize paint and coatings without added lead; and
- To provide guidance and promote assistance to identify and reduce potential lead exposure in and around housing, childcare facilities and schools in which paint containing lead is present.

Members of Partnership

The Global Partnership is a voluntary and collaborative relationship between various parties, governmental, non-governmental, public and private, in which all participants agree to work together in a systematic way to achieve the overall goal of phasing out the use of lead in paints.

The Global Partnership is open to any government, regional economic integration organization, intergovernmental organization, international, regional or national organization, industry or business organization, non-governmental/civil society organization or academic institution that supports the Partnership goal. It is open also to any other entity or an individual who agrees to work towards the goal of the Partnership.

Participation will be encouraged from the following groups:

- Representatives of national governments including those
    - that have already phased-out the use of lead in paints in their countries and are willing to share experiences and provide help to those who are now prepared to do so;
    - where paints containing lead are still available on the market;

- Representatives of relevant Intergovernmental Organizations (such as WHO, UNEP, UNIDO, UNITAR);
- Representatives of the lead industry and paint industry,
- Representatives of international and/or national companies that manufacture paints; and possibly of their relevant trade organizations;
- International and national medical and public health organizations;
- Academics with expertise in relevant fields;
- Representatives of international and national NGOs that work on environmental health issues and that have experience with public outreach and awareness campaigns and/or with implementation of prevention programmes at the community or national levels.;

Guidance for a working definition of lead paint

The following criteria are used as a working basis for defining “lead paint”:
- the term "lead paint" includes paints, varnishes, lacquers, stains, enamels, glazes, primers or coatings used for any purposes;
- lead is added to the paint, varnish, lacquer, stain, enamel, glaze, primer or coating;
-the total lead concentration is defined on a weight percentage of the total non-volatile portion of the product or in the weight of the dried paint film.

Activities

Partnership activities may include:

- Preparation and dissemination of information materials in national languages to raise awareness about the presence of lead in the paints in a country’s market, and about how this can harm public health. Since the ingestion of lead-containing dust is a major source of lead exposure for children, awareness efforts should include the promotion of warnings on all cans of paint stating that lead dust is toxic and that precautions need to be taken in preparing previously painted surfaces for repainting to minimize exposures to lead dust that may be created. Audiences include the general public, the national public health and medical communities, companies that manufacture, import and/or sell paints, downstream user of the paints, retailers, marketers, and relevant government officials.
- Provide information on substitution and alternatives for lead in paint and support the transfer of technology to do this, working with existing efforts to establish web based portals for information on substitution, alternatives, tools and processes;
- Reviewing the scientific literature and existing national standards as a basis for preparing a guidance document that can be used by governments wishing to establish national regulatory frameworks governing the total lead content of paints;
- Preparation of guidelines for establishing national standards to specify the total lead content of paints, including importation controls; developing a process to establish a

recognized, internationally accepted standard that governments may wish to use in the development of national regulatory frameworks governing the total lead content of paints, including contamination levels, that are nationally manufactured, imported, sold or used;

- Providing guidance for the effective enforcement of these national frameworks;

- Providing guidance for the coordinated development and implementation of appropriate prevention programmes for reducing and eliminating risks from paints containing lead with the possibility of translation into UN languages;

- Monitoring continued manufacture, export, import, sale and use of paints containing lead for applications likely to contribute to childhood lead exposure; and

- Publishing a newsletter providing information on work undertaken by members and progress towards achieving the goal and objectives of the partnership with the possibility of translation into UN languages.

Activities will be developed and implemented following the lead sponsor approach. The lead sponsor(s) for each activity in collaboration with interested partners will prepare a work plan, time line, budget and fund raising plan.

The Partnership will develop and implement a monitoring mechanism for tracking progress on activities undertaken through and by the partnership.

Means of Work

The Global Partnership will undertake its work primarily through electronic communication mechanisms. Opportunities in conjunction with SAICM Regional Meetings and international, regional and national meetings on chemical management will be utilized.

The Global Partnership will be supported by the SAICM Secretariat. Subject to the availability of resources, the SAICM Secretariat will:

- provide administrative and secretariat support;
- facilitate information exchange via the SAICM Clearinghouse services;
- help bring new partners to participate in the Global Partnership, as appropriate; and
- facilitate reporting on progress of the Global Partnership to ICCM.

A chairperson will be designated from among members to facilitate the overall coordination of the Global Partnership.

Resources

Each entity or individual, upon becoming a member of the Global Partnership, will commit to contribute resources (financial or in-kind) or expertise to the development and implementation of partnership activities. Members will work to identify potential relevant funders, government donors or other institutional donors with an interest in providing resources to for the partnership activities.

A budget and fund raising plan will be prepared for each activity by the lead sponsor(s) and interested partners. Countries and organizations in a position to do so are encouraged to provide the identified resources needs. Submission of project activity proposals to the SAICM Quick Start Programme Trust Fund will be pursued.

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[i] See http://www.chem.unep.ch/mercury/partnerships/new_partnership.htm

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Prepared by IFCS and U.S.

DRAFT FOR COMMENT BY 18 FEBRUARY 2009

Emerging policy issues

Draft information document on lead in paints

In 2002, the World Summit on Sustainable Development (WSSD) made two decisions to protect children's health from exposure to lead. Paragraph 56 (b) of the WSSD Plan of Implementation (POI) called for: "*Supporting the phasing out of lead in gasoline.*"

The other decision was paragraph 57. It states:

> "*Phase out lead in lead-based paints and in other sources of human exposure, work to prevent, in particular, children's exposure to lead and strengthen monitoring and surveillance efforts and the treatment of lead poisoning.*"[i]

At WSSD, the *Partnership on Clean Fuels and Vehicles* was established to contribute to the implementation of WSSD POI paragraph 56, and to help developing countries eliminate lead from fuels.[ii] At a 2005 Partnership meeting held in Kenya, it was agreed that the partnership was on course to "phase out leaded gasoline by the end of 2008 worldwide."[iii] The global campaign to eliminate lead from gasoline appears to be approaching success. This will make an important contribution in substantially reducing childhood lead poisoning in many developing countries.

In contrast, there has been less concerted international action aimed at helping to implement WSSD POI paragraph 57. There are no international or regional organizations that address lead in paint. Paints containing lead are still widely manufactured and sold for use in many countries of the developing world. Therefore, it is very likely that most of the world's population lives in countries where domestic paints with high lead levels are readily available. It has long been known that paints containing lead can be a significant source of childhood lead exposure and poisoning, especially when they are used to paint the interiors and exteriors of homes or schools, and when they are used to paint toys, furniture, playground equipment and other articles with which children come in contact. Moreover, paints containing lead are used in a variety of infrastructure (*e.g.*, bridges), industrial (*e.g.*, automobile parts), and marine (*e.g.*, ships) applications which can contribute to lead in soils and roadway and sidewalk grit which can be tracked into homes or become airborne and make its way into homes.

The purpose of this paper is to provide background for consideration of the phase-out of the use of lead in paints globally.

Background

In addition to the Toxics Link submission on lead in paint to the International Conference on Chemicals Management (ICCM) at its second session, the International Forum on Chemical Safety (IFCS), in its submission on substitution and alternatives, proposed the consideration of a global partnership addressing lead in paint.[iv] IFCS notes that the Johannesburg Plan of Implementation of the World Summit on Sustainable Development paragraph 57 calls for the phasing out of lead in lead-based paints and in other sources of human exposure, the prevention of exposure to lead, particularly for children, strengthening monitoring and surveillance efforts, and the treatment of lead poisoning. In response to the request of Forum VI, IFCS has developed

terms of reference for a global partnership for consideration by ICCM2. At Forum VI, IFCS also endorsed overall efforts by governments and others to reduce risks to human health and the environment of lead throughout the life cycle of this substance. At Forum V, the IFCS considered the topic of toys and chemical safety and recommended actions towards the elimination of use in toys of substances such as lead that are likely to result in adverse toxic effects.[v] The United States also proposed cooperative action on lead, including areas related to lead in paint, such as encourage efforts by governments and others to reduce risk to human health and the environment from lead throughout the whole life cycle of the substance, encourage efforts by governments and other to reliably eliminate the use of lead in products intended for children, and calls for research in the area of alternatives for lead-based products. Submissions by the European Union and Japan regarding an information system related to the chemicals in products could be relevant to lead in paints as well.

Health Impacts and Significant Sources of Lead-Paint Exposure

Lead Poisoning in Children

Lead exposure is a well-known source of injury to human health, and particularly to the health of children and to workers in lead industries. No level of exposure to lead is considered safe.[vi vii viii] There is clear evidence of neurocognitive decrements being associated in young children with blood lead concentrations in the range of 5 to 10 micorgrams per deciliter (µg/dL) and possibly lower. Recent analyses appear to show lead effects on the intellectual attainment of preschool and school age children at population mean concurrent blood lead levels as low as 2 µg/dL.[ix] The rate of decline in intellectual impairment is greater at blood lead levels less than 10 µg/dL than at concentrations greater than 10 µg/dL [x]

Functional manifestations of lead neurotoxicity during childhood include sensory, motor, cognitive and behavioral impacts, including learning disabilities; attention deficits; disorders in a child's coordination, visual, spatial and language skills, and anemia [xixii]. Some studies indicate linkages between lower-level lead toxicity and behavioral problems (*e.g.*, aggression, attentional problems, and hyperactivity) in children[xiii]. Effects of lead on neurobehavior have been reported with remarkable consistency across numerous studies of various designs, populations studied and developmental assessment protocols. Negative lead impacts on neurocognitive ability and other neurobehavioral outcomes are robust in most recent studies even after adjustment for numerous potentially confounding factors (including quality of care giving, parental intelligence, and socioeconomic status). Lead toxicity is irreversible and its effects generally appear to persist into adolescence and young adulthood.[xiv]

Children's Exposure to Lead from Paint

Exposure to lead in paint has long been one of the most common causes of clinical lead toxicity. House dust is the most common exposure pathway through which children are exposed to lead paint hazards. Dust created during normal wear of lead paint (especially around windows and doors) can create an invisible film over surfaces in a house. Children, particularly younger children, may also ingest lead paint chips from flaking walls, windows, and doors. Lead from exterior house paint can flake off or leach into the soil around the outside of a home, contaminating children's play areas. Renovation activities actually increase the threat of lead paint exposure by dispersing lead dust particles in the air and over accessible household surfaces. Dust can be resuspended through household activities, including through cleaning, thereby posing an inhalation risk as well. Lead exposure is often due to ingestion from hand-to-mouth activities and pica, which are common in children. For children, dust ingested via hand-to-mouth activity is often a more important source of lead exposure than inhalation. However, inhalation lead

exposure to children can also be increased markedly during renovation, repair or demolition projects.[xv]

Lead paint used on exteriors of homes, schools, public and commercial buildings and structures such as bridges can be a source of exposure to children. Normal weathering as well as repair, renovation, and painting activities which disturb lead paint can contribute to lead loadings in soil. Soil containing lead from lead paint can be tracked into homes and other buildings where it can be a significant source of exposure. The percentage of indoor dust that is from soil and other exterior sources is estimated to be typically greater than 70%.[xvi]

Adults' Exposure to Lead in Paint

Lead can cause neurological effects in adults at levels encountered in occupational settings. Effects on adults of low-level lead exposures include some renal effects and cardiovascular effects, including increased blood pressure and incidence of hypertension.[xvii]

In addition to exposures from living in homes with lead paint, adults can be exposed occupationally to lead from lead paint. Residential renovation and paint removal can be major sources of lead exposure for workers as well as residents. Dry sanding, abrasive blasting, and burning, welding, or heating surfaces covered with lead paint typically generate highly dangerous airborne lead levels. [xviii] [xix] Lead paints have been used as coatings on highway bridges for many years. Paint removal during bridge renovation projects has also been cited as a major source of lead exposure for workers. As with residential renovation, lead concentrations during industrial paint removal depend largely on the technology used. Generally, abrasive blasting techniques are used, which breaks lead coatings into small particles that can be inhaled or ingested if hands are not washed prior to eating or smoking.[xx]

Use of Lead in Paint

Lead paint was the dominant form of house paint in the developed world for many decades, and a significant percentage of homes still contain lead paint on some surfaces. Many of these countries phased out the use of interior and exterior paints containing lead. In the United States the use of lead in paint decreased markedly after World War II. In 1978, the United States banned the use of paint containing more than 0.06 percent (600 ppm) lead by weight on toys, furniture, and interior and exterior surfaces in housing and other buildings and structures used by consumers.[xxi] New standards for lead in paint and consumer products in the United States which will be effective 14 August 2009 require that any product designed or intended primarily for children 12 years of age or younger will be banned if it contains more than 300 ppm total lead content by weight for any part of the product and the lead content standard for surface paint in furniture, toys and other children's products will be reduced from a maximum of 0.06 percent (600 ppm) lead by weight to a maximum of 0.009 percent (90 ppm) lead by weight.[xxii] A similar pattern took place in European countries, too, before the general sale of leaded paint was prohibited in the European Union in 1989.[xxiii] In Australia, restrictions on the use of lead in paints for domestic application were initiated in the early part of the 20th century. The limit is now 600 ppm. In 2008 Australia enacted a regulation banning the use of fourteen (14) lead compounds in paints that were manufactured or imported for industrial use.[xxiv] South Africa passed legislation in 2008 restricting the use of lead in household paints to less than 600 ppm, effective in March 2009. Although in Thailand action to phase out paint containing lead was taken almost two decades ago in essentially a voluntary initiative by the paint industry, five of seven brands of paint recently sampled in Thailand contained lead levels as high as 30,000 ppm.[xxv,xxvi]

Paints with added lead are still commonly available in the developing world. In Russia interior paints containing lead are restricted by the legislation adopted in the USSR in 1929 and 1984 and later by the Russian Federation in 1991 and 1992.[xxvii] I n 1991 Russia ratified the ILO White Lead (Painting) Convention, 1921 (No. 13)[xxviii]. Independent research has shown that paints containing lead, mainly exterior paints, can easily be found on the Russian market.[xxix] A recent study in China showed that 50 percent of new paint samples tested contain lead at levels equal to or exceeding 600 ppm. Despite a wide range in retail prices, there was no correlation between price and lead content among the 58 paint samples collected.[xxx] A similar study of new residential paints being sold in India indicates that 84 percent of enamel paints have lead levels that exceed 600 ppm.[xxxi] However, one nationally distributed major brand that is available within the same price range as their competitors appears to have eliminated the use of lead pigment and other lead additives. This suggests that price should not be a deterrent for paint companies to shift to lead-free alternatives and still remain competitive.

After lead in gasoline, lead in paint is overall the largest source of lead exposure. Lead paint can remain a source of lead exposure and poisoning for many years. For example, even though the use of lead in paint was essentially banned in the United States in 1978, there are still 38 million housing units that have lead paint. Furthermore, despite efforts to reduce the exposure to children from lead in paint there are still about 185,000 children aged one to five with blood lead levels greater than 10 µg/dL and approximately 837,000 children with blood lead levels greater than 5 µg/dL.[xxxii] Low-income children and African-American children are disproportionately affected.

Societal Impacts of Lead Poisoning in Children

Even low level lead poisoning of children can have significant societal impacts. As Weiss[xxxiii] and Gilbert and Weiss[xxxiv] the societal effects of low-level lead poisoning can be seen when looking at the population-level effects. Gilbert and Weiss note that while small IQ changes in an individual child may not seem significant, when viewed at a population level the impacts are substantial:

> *"Assuming a mean IQ of 100 for a large population and a normal distribution, the tails of the curve represent those with superior IQ (greater than 130) and those with lower IQ (less than 70). IQs below 70 require significant societal support such as remedial education. A five-point drop in IQ would significantly change the number of people in the tails of this distribution. For example, in a population of 100 million with a mean IQ of 100 there would be 6 million people with IQs above 130 and an equivalent number with IQs below 70. A shift in the mean of 5 IQ points (5%) would result in only 2.4 million gifted people with IQs above 130 and 9.4 million people with IQs less than 70 who also require remedial assistance. The consequences to society will clearly be enormous. Figure[1]"*

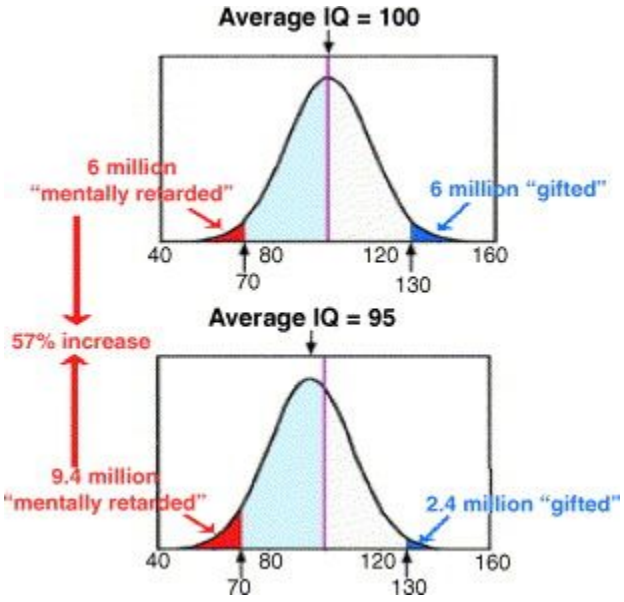

Fig. 1. Losses associated with five-point drop in IQ on a population of 100 million. Based on Weiss (1988) and modified by http://www.ourstolenfuture.org/NewScience/behavior/iqshift.htm. [From Gilbert, S.G. and Weiss, B. A rationale for lowering the blood lead action level from 10 to 2µg/dL. NeuroToxicology. 27(5), September 2006, p. 697]

These data are not simply of statistical interest but point to the substantial decline in the societal intellectual resources (*i.e.*, those with IQs greater than 130) and the significant resources (*e.g.*, special education) needed to address the increase the large increase in the population with IQ less than 70.[xxxv] This impact will be even more significant for disadvantaged populations in which the mean IQ is lower, *e.g.* 85 rather than 100. They will be impacted more significantly and suffer disproportionately by the IQ decrements resulting from lead exposure.

In 2002, WHO *World Health Report* identified lead exposure as one of twenty leading selected risk factors contributing to the global burden of disease and stated that worldwide, 40 percent of children have blood lead levels greater than 5 µg/dl, and that 97 percent of the affected children live in developing regions.[xxxvi]

A 2002 study by Philip Landrigan and others investigated the socio-economic impacts of lead exposure in children in the United States. It estimated the cumulative reduction in childhood intelligence associated with current levels of lead exposure and correlated this to reduction in a child's lifetime earning potential. The study concluded that the economic losses that can be attributed to the level of childhood lead exposure at the time of the study amount to US$43.4 billion per year.[xxxvii]

There appear to be no similar studies that have been conducted to quantify the socio-economic costs of childhood lead exposure in developing countries; however, since childhood lead exposure in many developing countries is generally much higher than in the United States, it is reasonable to assume that it represents a major socio-economic burden in developing countries and is an important impediment to achieving national sustainable development objectives. Widespread childhood lead exposure undermines educational achievement and reduces the productivity of the workforce. Therefore, public health interventions that can significantly reduce childhood lead exposure can make an important contribution to achieving sustainable development objectives including the Millennium Development Goals.[xxxviii]

What is the level of knowledge about lead in paint?

Lead exposure is a well-known source of injury to human health, and particularly to the health of children and to workers in lead industries. Lead's poisonous properties have been recognized since ancient times. In the first century B.C., for example, the Roman architect, Vitruvius, spoke out against the use of lead pipes for conveying water saying that water "conveyed in lead must be injurious, because from it white lead is obtained, and this is said to be injurious to the human system." He also noted that "workers in lead, are of a pallid color for in casting lead, the fumes from it fixing on the different members, and daily burning them, destroy the vigor of the blood."[xxxix]

While lead is clearly recognized to cause toxicity, the extent to which lead in paint is understood to be a source of lead poisoning varies. Despite the fact that legacy uses of lead paint still provide a significant source of lead exposure in the developed world, many believe that because the use of lead in paint above certain levels has been banned for many years, lead poisoning from lead paint is a problem of the past. Others view this as something that impacts only a small segment of society. In the developing world, the threat of lead poisoning from lead paint has also been significantly underestimated.

Proposed action

Develop a Global Partnership to Implement Paragraph 57 of the WSSD POI, focusing on the phase-out of lead in paint. The partnership would use as models the partnership that was formed during WSSD to promote clean fuels and vehicles, which has been very effective and the UNEP Global Mercury[xl] which is moving forward effectively. The objectives would be to phase out lead in paints.

Potential cooperative actions

Several actions proposed to address lead in paint include:

- Information exchange on lead levels in paints in various countries
- Information exchange on regulations and legislations and their nature on lead concentrations in paints allowed in various countries.
- Discussion on further steps to phase out lead from paints.
- Global discussion and concrete actions to phase out lead from paints from world
- Information (labeling) system relating to the lead content of paint

Given that the problem of lead in paint includes significant exposure from legacy use of lead in paint, other potential actions should be considered. These include:

- Information exchange on safe methods to remove lead paint from housing and other buildings
- Information exchange on safe methods to conduct repair or renovation activities on in homes and other buildings that contain lead paint to minimize exposures to residents and releases to the environment which may contribute to future exposures.
- Discussion on steps to reach health providers, caretakers and parents on how to minimize children's exposure to lead from lead paint.
- Build capacity to help various officials across ministries to test for lead in paint and enforce measures related to lead in paint.

At the request of Forum VI, the IFCS has prepared and submitted for the consideration of ICCM a draft resolution to establish a global partnership to phase out the use of lead in paints under the auspices of the ICCM. The draft resolution includes proposed terms of reference for the partnership.

These actions would further the SAICM objectives of risk reduction, knowledge and information, governance, capacity building and technical cooperation.

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[i] See: WSSD POI at: http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIChapter6.htm
[ii] See: http://www.unep.org/pcfv/pdf/InfSheet.pdf
[iii] See: http://www.unep.org/pcfv/PDF/4GPM-report-final.pdf
[iv] Dakar Resolution for Eliminating Lead in Paints, Forum VI Sixth Sessionof the Intergovernmental Forum on Chemical Safety, Final Report, Executive summary (IFCS/FORUM-VI/07w) Available at: http://www.who.int/ifcs/documents/forums/forum6/report/en/index.html
[v] Toys and Chemical Safety, Forum V Fifth Session of the Intergovernmental Forum on Chemical Safety, Executive Summary (IFCS/FORUM-V/05w) Available at: http://www.who.int/ifcs/documents/forums/forum5/report/en/index.html
[vi] CDC. Prevention lead poisoning in young children: a statement by the Centers for Disease Control and Prevention. Atlanta, GA USA: CDC; 2005, Available at www.cdc.gov/nceh/lead/publications/prevleadpoisoning.pdf.
[vii] CDC. Managing elevated blood lead levels among young children: recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention. Atlanta, GA: CDC; 2002. Available at www.cdc.gov/nceh/lead/casemanagement/casemanage_main.htm.
[viii] U.S. Environmental Protection Agency. Air Quality Criteria for Lead (September 29, 2006).
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[x] R.L. Canfield, C.R. Henderson Jr., D.A. Cory-Slechta, C. Cox, T.A. Jusko and B.P. Lanphear, Intellectual impairment in children with blood lead concentrations below 10 µg/dL, *N Engl J Med* **348** (2003), pp. 1517–1526.
[xi] U.S. Environmental Protection Agency. Air Quality Criteria for Lead (September 29, 2006)
[xii] See: WHO Euro Region, *Study on environmental burden of disease in children: key findings*: http://www.euro.who.int/document/mediacentre/fs0504e.pdf
[xiii] U.S. Environmental Protection Agency. Air Quality Criteria for Lead (September 29, 2006)
[xiv] U.S. Environmental Protection Agency. Air Quality Criteria for Lead (September 29, 2006)
[xv] U.S. Environmental Protection Agency. Air Quality Criteria for Lead (September 29, 2006)
[xvi] Insert – IEUBK reference
[xvii] U.S. Environmental Protection Agency. Air Quality Criteria for Lead (September 29, 2006)
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[xx] Chute, D. O.; Mostaghim, N. L. (1991) Protecting workers from lead. A review of regulations and practices. J. Prot. Coat. Linings 8(4): 36-43
[xxi] U.S. Consumer Product Safety Commission. Federal Register (42 FR 44199, September 1, 1977, as amended at 43 FR 8515, March 2, 1978
[xxii] Consumer Product Safety Improvement Act (H.R. 4040) http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.04040:
[xxiii] See: European Council Directive 89/677/EEC
[xxiv] Surface Coatings Australia, APMF Notes, November 2008 page 5

[xxv] J. Rochow *personal communication* "highlighted at 1994 Global Dimensions of Lead Poisoning conference, convened by the Alliance to End Childhood Lead Poisoning"
[xxvi] S. Clark "Levels of Lead in Decorative Paints", presented at The 12th Asian Paint Industry Council Meeting, Kuala Lumpur, Malaysia 6-7 November 2008, pp 98-112 of meeting document.
[xxvii] See: http://webknow.ru/ekologija_00167_6.html
[xxviii] See: http://www.ilo.org/ilolex/cgi-lex/ratifce.pl?C013
[xxix] See: http://www.baugid.ru/2008/02/01/masljanye-materialy.html and http://prilog.ru/materialy/kraski.html
[xxx] Lin,G.Z.,et al.,Lead in housing paints: An exposure source still not taken seriously for children lead poisoning in China. Environ. Res. (2008), doi:10.1016/j.envres.2008.09.003
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[xxxii] Centers for Disease Control and Prevention, NHANES 2003-2006 data.
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[xxxv] Bellinger, D. C. and Bellinger, A. M. Childhood lead poisoning: the torturous path from science to policy. The Journal of Clinical Investigation 116 (4) April 2006, Pages 853-857.
[xxxvi] See: http://www.who.int/whr/2002/en/whr02_en.pdf
[xxxvii] Landrigan, P. et al, *Environmental Pollutants and Disease in American Children:* http://www.ehponline.org/members/2002/110p721-728landrigan/EHP110p721PDF.PDF
[xxxviii] A methodology that can be used for relating lead regulations to the MDG can be found in the United Nations Development Program's *Toolkit for Incorporating the Sound Management of Chemicals in MDG-based Policies and Plans* at: http://www.undp.org/chemicals/Documents/UNDP%20toolkit%20-%20Mainstreaming%20the%20Sound%20Management%20of%20Chemi%5B1%5D..pdf
[xxxix] See: Lead Poisoning and Rome, from the Encyclopedia Romana, on the web at: http://penelope.uchicago.edu/~grout/encyclopaedia_romana/wine/leadpoisoning.html
[xl] See http://www.chem.unep.ch/mercury/partnerships/new_partnership.htm

Draft 03 February 2009
Prepared by Switzerland and USA

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FOR COMMENT BY 20 FEBRUARY 2009

Draft document setting out possible cooperative actions on nanotechnology and manufactured nanomaterials

[Resolution on co-operative actions on nanotechnology and manufactured nanomaterials

Considerations

1. There are potential benefits and new opportunities associated with the use of nanotechnology and nanomaterials, but there are also challenges, hazards, risks, ethical and social issues. There is a need to raise the awareness of these aspects.

2. It is necessary to address the safety aspects of nanotechnologies. Nanotechnologies deal with visualizing, characterizing and manufacturing tailored materials, devices and systems in the size of <= 100 nm. For the purposes of ICCM2, the primary focus is on the safety aspects of nanomaterials.

3. It is important to take into account the relevant work of intergovernmental and international organizations as well as national and regional activities of governments and nongovernmental organizations. Current efforts to identify potential environmental, health and safety risks of manufactured nanomaterials have not yet been fully conclusive and such efforts should be expanded and supported globally.

4. There is a *need* to ensure that the use of manufactured nanomaterials contribute to sustainable development and pollution prevention to achieve the 2020 WSSD goals related to chemicals. It is important that risk assessment and risk management strategies are incorporated into this effort.

5. There is a requirement for further research and research strategies to support better analysis of the potential risks on human health and the environment.

6. It is necessary to better understand the needs and capacities of developing countries and countries with economies in transition to cope with manufactured nanomaterials.

Next Steps:

1. Governments and stakeholders should initiate or continue dialogue to consider the potential benefits and risks of manufactured nanomaterials.

2. Governments, intergovernmental and international organizations, universities, the private sector and other stakeholders should make information on the use and risks associated with the life cycle of manufactured nanomaterials readily accessible to the general public in order to raise awareness and prepare it for informed decisions.

3. Researchers and academics should increase the knowledge necessary to evaluate effectively the potential risks of nanomaterials.

4. Governments and industry should continue to fill gaps in the knowledge of risk assessment including the whole life cycle of manufactured nanomaterials under real world conditions.

5. Measures should be taken to prevent or minimize exposure of workers and releases to environment, particularly for hazardous manufactured nanomaterials or where there is uncertainty around the environmental and human health impact of manufactured nanomaterials.

6. Downstream users through the whole supply chain should be informed about health and safety risks and novel characteristics of manufactured nanomaterials via Material Safety Data Sheets (MSDS) or other means.

7. Governments and stakeholders should promote the sharing of safety information on manufactured nanomaterials, while exploring the need for changes to current legislative frameworks.

8. International Standards Organisation (ISO) should expedite its ongoing development of clear definitions of manufactured nanomaterials including but not limited to size characteristics.

9. Governments, intergovernmental, international organizations and nongovernmental organizations, industry and other stakeholders shall support these recommendations.

10. Intergovernmental organizations and other relevant organizations shall assist governments to implement these actions.

11. The third session of the International Conference on Chemicals Management (ICCM3) should consider the need for possible further actions on this issue.]

DRAFT FOR COMMENT BY 20 FEBRUARY 2009

Emerging policy issues

Draft information document on nanotechnology and manufactured nanomaterials

1 Introduction

Nanotechnology is expected to lead to many potential benefits and new opportunities across a wide range of economic sectors**.** This background document focuses on the human health and environmental safety considerations as well as potential environmental benefits, though it does address other issues to place the topic in context. The aim of the document is to raise awareness of the current state-of-the-art. The document includes a list of references of key documents for further reading. It is accompanied by a list of possible co-operative actions for the future.

Nanotechnology is an enabling technology that is expected to result in major changes in many economic sectors from medicine to energy. It will contribute to the production of many novel materials, devices and products. Depending on the area of application under consideration there are different timelines for the beginning of industrial prototyping and nanotechnology commercialization. Some first generation products are already on the market in products such as paints, coatings and cosmetics. More sophisticated products such as pharmaceuticals, diagnostics and applications in energy storage and production are under development.

Many studies have tried to estimate the economic prospects for the nanotechnology market. For example, it has been estimated that the area of nanoelectronics (semiconductors, ultra capacitors, nanostorage and nanosensors) will be worth around $450 billion in 2015. A similar estimate for the case of nanomaterials (particles, coatings and structures) has been made at $450 billion for 2010. Further generations of nano-enabled products based on active nanoscale structures and nanosystems will be developed in the future. Such developments will involve innovations with respect to processes of technical modernization and changes in the interface between humans and machines/products.

The current discussion on opportunities and challenges of nanotechnology and manufactured nanomaterials focuses on 1st generation nanoproducts. It is incumbent on governments to develop a policy framework which enables the responsible development of manufactured nanomaterials through science-based risk assessment and appropriate management of the potential risks.

2 Level of knowledge about possible risks of manufactured nanomaterials

2.1 Human Health and Ecological risks

Some of the same unique properties that make manufactured nanoparticles beneficial also raise questions about the impacts of nanoparticles on human health and the environment. The evaluation of potential nanoparticle toxicity is complex, possibly being regulated by a variety of physicochemical properties such as size and shape, as well as surface properties

such as charge, area, reactivity, and coating type on the particle. As products made from nanoparticles become more numerous, the potential for human exposure and for release of nano-size particles into the environment may also increase. However, we are not starting from a blank sheet of paper. For instance, it has been known for many decades that inhaled particles cause damage to the lungs and also to the lining of arteries, and recent research has shown that specific effects may be caused by ultrafine particulate matter. How manufactured nanoparticles are the same as, or different from, natural or incidental nano-scale particulates, as well as how they differ from their bulk-scale counterparts, is the subject of much current research. We are only just beginning to understand how nanomaterials impact human health and the environment.

We are beginning to learn that, in addition to the dose and the elemental composition of the nanoparticles, factors such as their surface area, the function of the surface, tendency to aggregate, the form of the particles and their surface charge may play decisive roles in their distribution through the body, and their possible toxicity. Still, for most nanoparticles it is not clear whether and how they are taken up in the body, distributed, metabolised, accumulated and secreted. The development of kinetic models can help in the estimation of realistic doses of particles in target organs that could be affected. Understanding which exposure paths are relevant for various nanoparticles can help ascertain whether certain target organs can be excluded and thus help set priorities for toxicity testing. Another complication is that, in addition to particles themselves, the potential human health and ecological impacts of their breakdown products, as well as their interactions with other contaminants, also have to be considered.

Understanding potential exposure of nanoparticles to biological systems is an important near-term research need. For example, the lungs are the primary target site for inhaled nanoparticles. Lungs have an enormous exposed area, and inhaled and deposited nanoparticles can get into the bloodstream through the air-blood-tissue barrier. However, we have yet to learn which airborne particles are actually capable of being inhaled as nano-scale particles, due to such particles' tendency to agglomerate or form aggregates. In addition to the lungs, the skin provides a potential uptake surface following dermal exposures (such as for cosmetics, sunscreens, and nanoparticle-impregnated clothing).Studies have demonstrated that the intact skin protects the body efficiently and effectively against nanoparticles (such as with TiO2 in sunscreens). However very specifically engineered particles might penetrate intact or broken dermal barriers, and a generic conclusion regarding skin penetration does not exist. However, if some particles do result in exposure, we need to consider the hazard findings of preliminary studies using animals or cell cultures that have reported oxidative stress, inflammatory responses and cell membrane disruption through lipid peroxidation following nanoparticles exposure.

As with other exposure routes, oral ingestion of nanomaterials has not been adequately tested to date. Once ingested, some scientific studies report that nanoparticles are excreted efficiently through the intestine. For small particles (< 100 nm) increased uptake through the intestinal wall has been observed in rats.

It is not known whether nanoparticles, under non-test conditions, are able to enter biological systems in sizes that would allow them to move across the blood-brain, placental, or other barriers. Although a number of studies have demonstrated that some nanomaterials may be able to be transported directly from olfactory neurons into the central nervous system, crossing the blood-brain barrier, data on translocation between organs are based on different approaches, are based on artificial test conditions and the findings largely have not been replicated, and should therefore be considered speculative.

2.2 Occupational safety and health

The workplace is of key importance when considering human safety and health with respect to manufactured nanomaterials. The workplace is a first source of human exposure and there is the potential for relatively high exposure in such settings. According to our present knowledge, worker exposure to nanoparticles occurs primarily through handling nanoparticles in the making of products, and through working practices that generate nanoparticles as unintended by-products.

The specific physical and chemical properties of nanoparticles, compared with larger particles, can present unexpected safety risks. The most important material safety dangers are the risks of fire or explosion and of unexpectedly increased catalytic activity. In clouds of dust, the size of the particles and the related specific surface area are critical for explosion potential. Basically, the smaller the particles are, the greater the risk of a dust explosion will be. However, the physico-chemical properties of many particles are still only partly understood, so it is difficult to estimate these risks. So far, these dangers have been classified as relatively low for many manufactured nanomaterials, as nanoparticles are for the most part still produced in relatively small quantities.

There have not yet been any epidemiological studies on the health risks of modern manufactured nanomaterials. Concentrations at the workplace have begun to be measured, and it is not clear whether the current models for local and temporal concentration profiles apply in the case of new nanomaterials. At present there are no international standards on methods for measuring nanoparticles and for estimating exposure to them. Until norms in this area become available, exchanges of experience between measuring engineers and scientists will be particularly important.

Proven strategies to reduce exposure in the workplace are being applied to nanomaterials. Appropriate protection measures are evaluated and defined by specialists in occupational health and safety as part of workplace exposure assessment. In some countries the principle applies that new substances with unknown properties should be treated as potentially dangerous. Organisational protection measures should primarily be taken, supported by technical protection measures (such as closed systems) and the substitution of preparations that form powders. Personal protection equipment can occasionally supplement these measures, but in general it should not replace them. A number of studies show that correct use of technical protection systems and personal protection equipment are effective to product workers from some particle types[1].

2.3 Environmental risks

At present, relatively few studies have been carried out on the ecotoxicity and environmental behaviour (fate, transport, and transformation) of nanomaterials. So far, some studies have reported toxic effects of certain nanomaterials on certain aquatic organisms. However, many of these studies are limited or should be considered preliminary, for reasons including inadequately characterized test material, poorly defined dose metrics, or the test method has not been validated.

There are not yet any reliable estimates of possible environmental impacts that could occur during the production, use and disposal of nanomaterials or products containing nanomaterials. In particular there is a lack of suitable methods to measure nanomaterials in

the environment. Similarly, few, if any, studies have been carried out on by-products and breakdown products of nanomaterials. The basic aspects of the behaviour of micrometre-range particles in the air or in aqueous solutions have been clearly described and they can be understood in terms of quantitative models. Researchers are attempting to determine whether nanoparticles will work with existing models, or whether new models should be developed. So far, there are few studies exploring bioaccumulation and the possibility of the accumulation of nanoparticles in the food-chain. However, investigations show that nanoparticles can be taken up by organisms in the environment. We have to consider on one hand the storage of lipophilic nanoparticles in fatty tissues, and the resultant concentration in the food-chain, and on the other hand the accumulation of persistent nanoparticles in ecosystems and organisms if there are no pathways for their breakdown or excretion.

Until more is known, there is still a lack of the scientific information and methodological basis to carry out a robust risk assessment of nanomaterials. Several large-scale programmes are running or being planned in various countries and at the international level. These will deal with different aspects of risk research on nanomaterials. In this context, it is critical to have a coordinated, strategic approach to deal with the most important issues.

3 Activities of intergovernmental and international Organizations

OECD has established a Working Party on Manufactured Nanomaterials (WPMN) as a subsidiary body of its Chemical Committee. The objective of the WPMN is to is to promote international co-operation in human health and environmental safety aspects of manufactured nanomaterials among member and non-member countries, NGOs, industry and IGOs. The following eight projects are in the work plan of the WPMN:

- Development of an OECD Database on Human Health and Environmental Safety (EHS) Research
- EHS Research Strategies on Manufactured Nanomaterials (including Occupational Health and Safety)
- Safety Testing of a Representative Set of Manufactured Nanomaterials
- Manufactured Nanomaterials and Test Guidelines.
- Co-operation on Voluntary Schemes and Regulatory Programmes
- Co-operation on Risk Assessment
- The Role of Alternative Methods in Nano Toxicology
- Exposure Measurement and Exposure Mitigation

OECD's Committee for Scientific and Technological Policy has established a Working Party on Nanotechnology (WPN). Its aim is to look at the responsible development and use of nanotechnology and the potential benefits nanotechnology can bring to society, taking into account public perceptions related to advances in nanotechnology and its convergence with other technologies, without forgetting legal, social and ethical issues. The following projects are in the work plan of the WPN:

- Statistics and Measurement
- Impacts and Business Environment
- International Research Collaboration
- Outreach and Public Engagement
- Dialogue on Policy Strategies
- The Contribution of Nanotechnology to Global Challenges

ISO has established Technical Committee 229 – Nanotechnologies. Currently the following 4 working groups have been established: Terminology and nomenclature; Measurement and characterization; Health, Safety and Environmental Aspects of Nanotechnologies; and Material specifications. The following two documents have been published: ISO/TR 12885:2008 Nanotechnologies -- Health and safety practices in occupational settings relevant to nanotechnologies; and: ISO/TS 27687:2008 Nanotechnologies -- Terminology and definitions for nano-objects -- Nanoparticle, nanofibre and nanoplate. There are about 30 work items spread across the four working groups and are currently under development. ISO/TC229 has also discussed

OECD WPMN and WPN and ISO/TC229 have been routinely co-ordinating through both Secretariats as well as national representatives.

The UNESCO Ethics of Science and Technology Programme was created in 1998 with the establishment of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) to give an ethical reflection on science and technology and its applications. This programme aims to promote consideration of science and technology in an ethical framework by initiating and supporting the process of democratic norm building. This approach is founded upon UNESCO's ideal of "true dialogue, based upon respect for commonly shared values and the dignity of each civilization and culture". Awareness raising, capacity building and standard-setting are therefore the key thrusts of UNESCO's strategy in this and all other areas.

UNESCO has invited well-known experts in nanotechnology to discuss the state of the art of nanotechnology, examine the controversy surrounding its definition and explore related ethical and political issues. A 2006 report “The Ethics and Politics of Nanotechnology” "outlines what the science of nanotechnology is, and presents some of the ethical, legal and political issues that face the international community in the near future." UNESCO has recently published a book on "Nanotechnologies, Ethics and Politics. The aim of the book is to inform the general public, the scientific community, special interest groups and policy-makers of the ethical issues that are salient in current thinking about nanotechnologies and to stimulate a fruitful interdisciplinary dialogue about nanoscale technologies among these stakeholders.

A plenary session was held on nanotechnology and manufactured nanomaterials during the sixth Session of the Intergovernmental Forum on Chemical Safety (IFCS Forum VI, 15-19 September 2008, Dakar, Senegal). The objective was to exchange information in order to help raise the awareness of participants to the potential new opportunities, the new challenges and the new risks posed by manufactured nanomaterials. The Forum VI adopted unanimously the Dakar Statement consisting of 21 recommendations.

FAO and WHO have planned to convene a joint Expert Meeting which aims to identify knowledge gaps including issues on food safety, review current risk assessment procedures, consequently support further food safety research and develop global guidance on adequate and accurate methodologies to assess potential food safety risks that may arise from nanoparticles. Joint FAO/WHO Expert Meeting on the Application of Nanotechnologies in the Food and Agriculture Sectors: Potential Food Safety Implications is to be held on 1-5 June 2009, at FAO Headquarters, Rome, Italy. FAO/WHO has called for experts and information for the meeting.

For many years, intergovernmental organisations have collaborated on chemical safety through the Interorganization Programme for the Sound Management of Chemicals (IOMC). The IOMC has discussed the safety of nanomaterials on a number of occasions.

4 Potential health and environmental benefits

In addition to other commercial uses, manufactured nanomaterials will likely find their way into a number of applications with environmental benefits. Some of these are currently undergoing commercial development, and include:

- Use in the energy industry, for example in producing more efficient battery technology, more efficient solar collectors, and lighter and stronger wind turbines;
- Use to directly reduce environmental pollution, for example in remediating sites contaminated with organochlorine waste and application as self-cleaning surfaces to reduce urban NOx levels;
- Use as a fuel additive to reduce particulate emissions and increase fuel efficiency;
- Use in coatings as an alternative to more toxic chemicals; and,
- Use in purifying drinking water (being covered in depth by WPN project F – Global Challenges: Water Purification).

In considering the commercial introduction of manufactured nanomaterials to achieve potential environmental benefits, countries should also give due consideration to potential health or environmental implications of such use.

5 Possible cooperative action for the future

Governments that have not otherwise done so may wish to consider the relevance of nanotechnology and manufactured nanomaterials for their national situation. This could be done by, for example, integrating nanotechnology considerations into the national profile.

There is a range of activities underway in academia, industry and governments related to the environmental health and safety, and environmentally-beneficial applications. of manufactured nanomaterials. Relevant stakeholders should consider making as much of this information as possible publicly available, including through clearinghouses. Progress on this has been made by a number of entities, including the databases of the International Council on Nanotechnology (ICON), the NIOSH Nanoparticle Information Library, and the OECD WPMN's public Database on Human Health and Environmental Safety (EHS) Research **.** Intergovernmental Organisations may be able to make a significant contribution in this regard.

Some governments are devoting considerable resources towards research and development focused on new applications based on nanotechnology. Such governments may wish to consider balancing such applications resources with an appropriate level towards research to understand the environmental health and safety implications. Governments may also wish to consider funding research on nanotechnology applications that may be useful in meeting the actions called for in the Johannesburg Plan of Implementation of the World Summit on Sustainable Development, including such actions in developing countries and countries with economies in transition.

The OECD has opened up its two working parties (WPMN and WPN) to active participation by non-member economies and other observers. A number of non-OECD countries have

participated to-date, with mutual benefit, including Argentina, China, India, Russian Federation and Thailand. Some developed countries have made resources available to the OECD secretariat to facilitate such participation. Non-OECD countries or other observers with an interest in the issues being explored by the respective working parties may wish to contact the OECD secretariat and participate in those activities. Similarly, countries, NGOs and industry with an interest in participating in ISO TC229 and who are not already doing so may wish to contact their national standards bodies or TC229 itself.

Countries, NGOs, industry and IGOs with an interest in the potential environmental benefits of manufactured nanomaterials may wish to consider participating the OECD Conference on the Potential Environmental Benefits of Manufactured Nanomaterials to take place 1-2 June, 2009 in Prague, Czech Republic.

While the health and environmental safety implications of manufactured nanomaterials continue to be explored, governments and industry should consider taking measures to prevent or minimize exposure of workers and consumers, and releases to environment, particularly for hazardous manufactured nanomaterials or where there is uncertainty around the environmental and human health impact. Steps to inform downstream users through the whole supply chain via Material Safety Data Sheets (MSDS) or other means should be taken where appropriate.

6 References / further reading

International Organisations

- OECD Working Party on Manufactured Nanomaterials (WPMN) www.oecd.org/env/nanosafety
- OECD Working Party on Manufactured Nanomaterials (WPMN) - Tour de Table at the 4th meeting of the WPMN, 11-13 June 2008 [ENV/JM/MONO(2008)29] http://www.olis.oecd.org/olis/2008doc.nsf/linkto/env-jm-mono(2008)29
- OECD Working Party on Manufactured Nanomaterials - List of Manufactured Nanomaterials and List of Endpoints for Phase One of the OECD Testing Programme [ENV/JM/MONO(2008)13/REV] http://appli1.oecd.org/olis/2008doc.nsf/linkto/env-jm-mono(2008)13-rev
- OECD Working Party on Nanotechnology www.oecd.org/sti/nano
- International Organization for Standarization - ISO/Technical Committee 229 – Nanotechnologies www.iso.org
- Sixth Session of the Intergovernmental Forum on Chemical Safety, Dakar, Senegal, 15 – 19 September 2008 (IFCS Forum VI) http://www.who.int/ifcs/forums/six/en/index.html
    - Dakar Statement on Manufactured Nanomaterials (Final report of IFCS Forum VI) http://www.who.int/ifcs/documents/forums/forum6/report/en/index.html
    - "Nanotechnologies at the OECD" (http://www.who.int/entity/ifcs/documents/standingcommittee/f6_04inf.en.doc)
    - "Activities on Nanotechnologies in the IOMC Organizations' http://www.who.int/entity/ifcs/documents/forums/forum6/f6_05inf.doc
    - International Organization for Standarization - ISO/Technical Committee 229 - Nanotechnologies http://www.who.int/entity/ifcs/documents/forums/forum6/f6_06inf.en.doc
- Joint FAO/WHO Expert Meeting on the Application of Nanotechnologies in the Food and Agriculture Sectors: Potential Food Safety Implications, 1-5 June 2009

http://www.who.int/foodsafety/fs_management/meetings/nano_june09/en/ , http://www.fao.org/ag/agn/agns/index_en.asp

- UNESCO Ethics of Science and Technology Programme http://portal.unesco.org/shs/en/ev.php-URL_ID=10581&URL_DO=DO_TOPIC&URL_SECTION=201.html
- UNESCO The Ethics and Politics of Nanotechnology http://unesdoc.unesco.org/images/0014/001459/145951e.pdf)
- Nanotechnologies, Ethics and Politics http://portal.unesco.org/shs/en/ev.php-URL_ID=10883&URL_DO=DO_TOPIC&URL_SECTION=201.html

National governments and governmental agencies

- United States National Nanotehcnology Initiative _ http://www.nano.gov/
- United States – Environmental Protection Agency - Interim Report on the Nanoscale Materials Stewardship Program http://epa.gov/oppt/nano/stewardship.htm.
- United States NIOSH June 2007 Report http://www.cdc.gov/niosh/docs/2007-123/pdfs/2007-123.pdf
-
- United Kingdom – Nanotechnologies at Defra http://www.defra.gov.uk/environment/nanotech/index.htm
- European Commission – REACH and nanomaterials http://ec.europa.eu/enterprise/reach/reach/more_info/nanomaterials/index_en.htm
- France – Afsset, Les nanomatériaux – Sécurité au travail. (http://www.afsset.fr/upload/bibliotheque/258113599692706655310496991596/afsset-nanomateriaux-2-avis-rapport-annexes-vdef.pdf).
- France -Afsset, Nanomatériaux : exposition et risques pour la santé. L'Afsset est saisie par ses trois tutelles pour évaluer les risques pour la population générale. (http://www.afsset.fr/upload/bibliotheque/707587797463045494102824770797/CP_afsset_saisine_nanomateriaux_28072008.pdf).
- France -Afsset, Nanomatériaux : concilier l'innovation et la sécurité sanitaire. (http://www.afsset.fr/upload/bibliotheque/511821750834000786123519684814/dp_afsset_nanomateriaux.pdf).
- Swiss Action Plan Synthetic Nanomaterials (http://www.environment-switzerland.ch/div-4002-e)

Others

[1] Hullmann A. Measuring and assessing the development of nanotechnology; Scientometrics 70(3): 739-758, 2007

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FOR COMMENT UNTIL 25 FEBRUARY 2009

Draft document setting out possible cooperative actions on "chemicals in articles/products"

The intent of this document is to provide a draft of possible cooperative actions that are proposed for consideration by the International Conference for Chemicals Management (ICCM) at its second session, Geneva, 11-15 May 2009.

The mandate of the facilitator on this emerging policy issue was to further elaborate on proposals contained in the submissions received from proponents on this issue, taking into account the views of stakeholders. The facilitator recommends that the second session of the Conference specifically recognises the conclusions and recommendations from the informal workshop on "Stakeholders information needs on chemicals in products/articles" that was held in Geneva , 9-12 February 2009.

The overall purpose of the proposed cooperative actions are to contribute to reaching the SAICM 2020 goal with a special emphasis to the paragraph 15 (b) of the Overarching Policy Strategy of the Strategic Approach and related activities of the Strategic Approach's Global Plan of Action. The proposed cooperative actions should therefore provide further guidelines to implement the relevant objectives and activities in the global strategy.

The informal workshop recommended that:

- "a working group be established by the ICCM at its second session that responds to the need for information on chemicals in articles/products in the supply chain and throughout the life-cycle with a mandate to review existing information and develop a proposal for an information system or framework of systems and/or actions"

In this first draft the conclusions and recommendations from the workshop are presented as they were agreed at the workshop. The language in the final submission needs to be adjusted to ICCM 2 format. This will however depend on the structure for the final document prepared by the SAICM secretariat on proposed cooperative actions to be considered by the ICCM 2.

ANNEX

Conclusions and recommendations

The Workshop

Recognizes that:

- hazardous chemicals in articles/products are transported globally through international trade and have caused adverse impacts and may pose future risks to human health and the environment at different stages of the life cycle of an article/product: during production, use, recycling or disposal

- knowledge and information about chemicals in articles/products is fundamental to the sound management of chemicals throughout the life cycle of articles/products and is an important cross-cutting issue involving a broad range of stakeholders with specific information needs

- initiatives have been taken by Governments, industry and others to facilitate information exchange on hazardous substances in articles/products in some areas, but to date no comprehensive global action has been developed

- there is a global need for awareness-raising on the potential risks associated with chemicals in articles/products and on available alternatives especially in developing countries and countries with economies in transition having a low level of awareness

- subparagraph b (i) of Objective 15 of the Overarching Policy Strategy of SAICM on knowledge and information states *inter alia* that: information on chemicals throughout their life cycle, including, where appropriate, chemicals in products, is available, accessible, user friendly, adequate and appropriate to the needs of all stakeholders.

- information on chemicals in articles/products is a vital element supporting capacity building and other actions in SAICM

Concludes that:

- current efforts and capacities to provide information about chemicals in articles/products and alternatives are not sufficient for informed decision making to protect human health and the environment throughout the life-cycle of articles/products

- for effective and efficient information generation and accessibility, cooperative action is needed at all levels (international, regional, sub-regional, national and intersectoral) with the involvement of all relevant sectors

- international cooperation on this issue is essential and urgent action is needed to ensure global harmonization of information flow and access, avoid the creation of a patchwork of information systems and maximize the benefits to all stakeholders

- improved information flow stimulates development of new articles/products and processes through innovation, reduces business risks and has economic benefits

Recommends that:

- a working group be established by the ICCM at its second session that responds to the need for information on chemicals in articles/products in the supply chain and throughout the life-cycle

with a mandate to review existing information and develop a proposal for an information system or framework of systems and/or actions

- the working group may be open-ended and be comprised of stakeholder groups on the basis of equitable geographical distribution including a number of countries per region, relevant experts, industry and other actors in the supply chain and non-governmental organizations

- the working group addresses a range of issues and goals, including

    - which chemicals and articles/products to prioritize;

    - identification of the relevant stakeholders and their specific information needs

    - what information to provide and in what format;

    - appropriate technical and other solutions

- the working group takes into account the following key elements identified by the workshop:

    - where appropriate, complementary activities of other relevant emerging policy issues

    - work undertaken in international fora, including the Marrakesh process and possibilities for synergies

    - work and activities in other multilateral and international processes that are relevant to information systems such as the Globally Harmonized System of Classification and Labelling of Chemicals

    - specific challenges and needs of developing countries and countries with economies in transition, such as capacity building, technical and financial assistance and technology transfer

    - special needs of small and medium sized enterprises and the informal sector

- the working group make use of the outcome of the workshop when carrying out its tasks

- the working group incorporate any further guidance that the ICCM may provide at its second session

- during the intersessional period, the working group conduct its business primarily through electronic means and teleconferences, meeting in person and on the margins of other existing meetings as appropriate

- the Working Group may work with the SAICM secretariat to help facilitate the development and use of relevant information, case examples, approaches and tools that might be compiled consistent with its clearinghouse function

- the working group provide a report on the progress of its work through the SAICM website and to the third session of the ICCM

FOR COMMENT BY 25 FEBRUARY 2009

Draft information document on chemicals in article/products

Prepared for the second session of the International Conference on Chemicals Management

1. Information needs on chemicals in articles

Under this heading a brief paragraph of text should describe ***what the emerging policy is*** *and* ***how it meets the definition developed*** *in the informal discussions held in Rome. In these discussions an emerging policy issue was defined as one "involving the production, distribution and use of chemicals that has not been generally recognized or sufficiently addressed but which may have significant adverse effects on the environment." Whether* ***the issue arises*** *from advances in scientific knowledge, from policy development or from downstream use of chemicals could be briefly explained.*

Access to information is one key factor to enabling actors at all levels to avoid hazardous chemicals in articles/products and to facilitate the management of risks to human health and the environment that chemicals in articles /products may pose. The need for enhanced information flow throughout the product chain from manufacturing, distribution, use, recycling and waste handling has been identified and the overall aim of this initiative is to facilitate informed decision making with regard to chemicals in articles/products.

This emerging issue is not meant to address chemicals and chemical products that are already covered by the globally harmonized system for classification and labelling, GHS which provide an established system for information to professional users and consumers on chemicals and chemical products. This issue focuses on chemicals contained in articles where the form, design and surface is of more importance for the function of the article than its chemical content, i.e. computers, toys, textile, and furniture. These articles/products are currently not covered by any international information system or comprehensive global initiative.

Use of chemicals in articles is essential to meet the social and economic goals of the world community, but there is a growing understanding of the potential exposure to chemicals contained in commonly used articles, such as textiles, furniture, computers and toys. Hazardous chemicals in articles/products are transported globally through international trade and have caused significant adverse effects on human health and the environment with well known effects on health from lead in children's toys and jewellery and on environment from the release to water of Nonylphenol ethoxylates (NPEs) from

textiles, for example. Lack of information about chemicals in articles may pose future risks to human health and the environment at all different stages of the life cycle of an article/product: during production, use, recycling or disposal. Current efforts and capacities to provide information about chemicals in articles/products and alternatives are not sufficient for informed decision making to protect human health and the environment throughout the life-cycle of articles/products. Thus further action needs to be taken to reach the 2020 goals of SAICM.

The emerging policy issue of information needs on chemicals in articles is closely related to the strategic objective 15 in the Overarching Policy Strategy of SAICM which in short aims to ensure that: "information on chemicals throughout their life cycle including where appropriate, chemicals in products, is available, accessible, user friendly, adequate and appropriate to the needs of all stakeholders….". There is though, a need for a more elaborated guidance on how such information can be disseminated. The need for international cooperation has been recognized to ensure global harmonization of information flow and access, avoid the creation of a patchwork of information systems and maximize the benefits to all stakeholders.

This policy issue is also closely linked to the Marrakech process on Sustainable Consumption and Production (SCP), which addresses inefficient use of natural resources. Obvious connections between sustainable use of chemicals and sustainable production of articles include the implications regarding recycling possibilities for articles that contain hazardous chemicals. Better information on chemicals contained in articles would increase the possibilities to reach the goals of both the SAICM process and the Marrakech process, and could hence create synergies between the two processes.

2. Background

*In this section the document should **identify the original proponents** of the issue as contained in the secretariat's annotated list of submitted emerging policy issues. The background **should identify the facilitator of the preparatory work** on the information paper and briefly **describe the processes used to prepare the document and opportunities for consultation**. The facilitators should note that the issue will be presented in a technical briefing to be held on Sunday 10 May 2009 from 9.30 a.m to 1.00 p.m. and may wish to highlight any **side events or other additional opportunities** that exist during the second session of the Conference for discussion of the issue*

Proponents: European Union, Government of Japan
Linked submissions: Toys and chemicals safety, IFCS
Facilitator: Ms Johanna Lissinger Peitz (Sweden).
Johanna-lissinger.peitz@environment.ministry.se Telephone: +468 405 55 61 cellphone: +46 70 3492022.

To facilitate the work stakeholders that have a closer interest in the topic have been encouraged to indicate this to the facilitator.

To prepare the emerging issue an informal Workshop on 'Information Needs on Chemicals in Articles` was held in Geneva 9-12 February 2009. Regional SAICM focal points and NGOs were consulted to ensure a regional distribution and a representative participation. Also, IGOs and some companies producing relevant articles participated at the workshop. The aim with the workshop was to develop a common understanding of this emerging policy issue and to suggest possible cooperative actions for ICCM 2 to consider. The topic was discussed in depth between the stakeholders from the 59 governments, 7 industries, and 10 NGOs that participated. The presentations and report from the workshop can be found at the SAICM website (http://www.chem.unep.ch/unepsaicm/cheminprod_dec08/default.htm). The workshop report, including conclusions and recommendations, serve as the basis for this background information paper.

As part of the work process for emerging policy issues this paper has been open for consultation to all SAICM stakeholders.... Comments received (to be completed)……

At ICCM 2 a side event will be held presenting the conclusions and recommendations form the informal workshop as referred to above and the background study "Toxic Substances in Articles: the Need for Information".

3. Magnitude of the problem

*This section should summarize available **information on the magnitude of the problem**, **its impact** on human health and/or the environment, taking into account vulnerable subpopulations and any toxicological and exposure data gaps.*

Hazardous chemicals in articles/products are transported globally through international trade and there are several examples of significant adverse effects on human health and the environment. The issue of extensive spread of chemicals through articles has a global dimension and thus calls for global efforts. At the informal workshop the lack of information about chemicals in articles was recognized as a problem for the widest range of stakeholders, including industry, consumers, workers and government authorities.

The report "Toxic substances in articles: The need for information"[1] provides several case studies exemplifying the impact on human health and environment. Case studies are presented on the PFCs in water proof textiles, lead in children toys and jewellery, nonylphenol ethoxylates contamination from texiles and toxic substances in

[1] Toxic substances in articles: The need for information. TemaNord 2008:596. http://www.norden.org/pub/sk/showpub.asp?pubnr=2008:596)

computers/electronics. The report from the informal workshop on Stakeholders information need also identifies a range of other examples. [2]

With today's practices combined with lack of information, workers, users and the environment may be exposed to unacceptable risks from toxic substances in articles. This is costly in many ways. Beside the health and environmental effects it can be directly costly to companies to not know the chemical content of for instance components that they use in their production; - as recalls of for example toys or electronic equipments is very costly and can damage companies' images. Better information on chemicals in articles would therefore help companies in taking responsibility for the safety of the articles that they produce and avoiding costs for e.g. recalls. And as we are becoming increasingly aware of, recovery of disposed articles is very important to achieve a sustainable future – and this is only possible to do in a safe way if the contents of chemicals are sufficiently known.

For articles information on chemical contents very rarely exists even though they may contain harmful substances which sometimes leak out in considerable amounts during use or disposal. Historically, activities to address toxic chemical risks have focused primarily on releases to air and water connected to the manufacturing process. Increasingly, it is clear that toxic substances are also released from articles during use and at the end of their useful life. For some chemicals, most human and environmental exposures occur through product use and disposal, rather than in the manufacturing stage. For example, in the case of DEHP, used as a plasticizer in polymer products, about 95 % of the emissions occur from end-product uses and waste handling [3].

4. The relevance of the issue to countries or regions and stakeholders, in particular developing countries and countries with economies in transition

*This section should focus on **the how the issue is relevant to countries or regions and stakeholders,** and in particular to developing countries and countries with economies in transition. For purposes of clarity, the term "relevance" should not refer to relevance of any proposed actions. This aspect should be discussed under the heading "feasibility of the proposed action" in a subsequent section.*

Communicating information on chemicals contained in articles would open more possibilities for risk reduction of chemicals at all stages in the product life-cycle: during production; distribution and use as well as in the disposal/recycling phase.

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[2] Workshop report XXX

[3] European Commission, Institute for Health and Consumer Protection, Toxicology and Chemical Substance (TCS), European Chemicals Bureau. "BIS (2-ETHYLHEXYL) PHTHALATE (DEHP), Summary Risk Assessment Report," 2008, accessed at http://ecb.jrc.ec.europa.eu/documents/Existing-Chemicals/RISK_ASSESSMENT/SUMMARY/dehpsum042.pdf, October 28, 2008

International trade results in chemicals in articles being transported among all regions, and affect all countries. The issue of extensive spread of chemical substances through articles has therefore a global dimension and thus calls for global efforts. During the informal workshop in Geneva, expertise from developed and developing countries and from various stakeholders was brought together to discuss the relevance of the issue to countries or regions and stakeholders. The needs and concerns of developing countries were discussed, for example the need of access to foreign markets by meeting growing demands from purchasers and other customers for improved product information. The workshop recognised that initiatives have been taken by Governments, industry and others to facilitate information exchange on hazardous substances in articles/products in some areas, but to date no comprehensive global action has been developed. The workshop also recognised that there is a global need for awareness-raising on the potential risks associated with chemicals in articles/products and on available alternatives especially in developing countries and countries with economies in transition having a low level of awareness.

Case studies referred to above shows that this is a global problem where exposure and risks in different ways occurs in all parts of the world. Providing information about the presence of these substances in articles would facilitate the task of governments in addressing these risks. Equally important is that increased information would also make it possible for consumers and purchasers to make informed decisions, thus protecting their own health and the environment. In addition improved information through out the supply chain would facilitate for actors along the global supply chain to take appropriate actions and reduce risks for humans and environment through out the product life cycle.

5. The extent to which the issue is a cross-cutting nature

This section should identify how the issue may be relevant to different sectors e.g. environment, health, labour, industry and other.

Through out the life cycle the chemical content of an article move along the supply chain and may cause risks to human health and the environment along this chain. Access to information is fundamental to the sound management of chemicals throughout the life cycle of articles, involving a broad range of stakeholders and actors with specific information needs. The issue is relevant to different sectors of the society such as industry, the protection of the public, labour and the environment. Communicating information on chemicals contained in articles would open more possibilities for risk reduction of chemicals at all stages in the product life-cycle: during production; distribution and use as well as in the disposal/recycling phase. An improved information flow could also stimulate development of new articles/products and processes through innovation, reduce business risks and lead to economic benefits.

Recovery of disposed articles is very important to achieve a sustainable future – and this is only possible to do in a safe way if the contents of hazardous substances are

sufficiently known. Therefore, this issue is also an issue which could create synergies with the Marrakech process on Sustainable Consumption and Production (SCP).

6. The level of knowledge about the issue

*This section should convey **the level of general understanding of the issue**, not only the level of understanding or need for information expressed by the proponents of the original submission. Authors may like to refer to **existing information sources** which are of assistance in improving the understanding of the issue.*

There is not a widespread systemic level of knowledge on this issue, but a wide body of experiential knowledge exists. There is a general lack of awareness through out the life cycle and the level of knowledge also differs among different industry sectors. Understanding of the problem is generally considered to be low. Although data exist to a certain extent there is today not a general understanding or a system ensuring that relevant stakeholders have access to appropriate information. The level of information might be quite detailed early in the supply chain but as the product moves along the life cycle the information seems to get lost and the general awareness and knowledge further down the life cycle is considered to be general low. No structured information sources exist but rather information is produced on a reactive basis (example formaldehyde in indoor environment and plasticizers in PVC). Lack of coordination has lead to these issues being re-discovered in several regions.

Although certain systems do exist within certain branches, such as detailed Material Safety Data sheets MSDS within the automotive industry, the information is not distributed further along the supply chain to decision makers or consumers.
The informal workshop recognized that although several initiatives have been taken by Governments, industry and others to facilitate information exchange on hazardous substances in articles/products in some areas, but to date no comprehensive global action has been developed.

The background study "Toxic Substances in Articles: the Need for Information"[4], states that in developing an information system for chemicals in articles, a number of existing systems around the world are worth examining. In the absence of any internationally harmonized approach to information on chemicals in articles, some jurisdictions have created information disclosure requirements. The study discusses a few innovative policies that may be of interest as models for future policy efforts. These include legal requirements for information disclosure and information management systems that have been created by the private sector.

[4] http://www.norden.org/pub/sk/showpub.asp?pubnr=2008:596

The workshop recognised that it is a global need for awareness-raising on the potential risks associated with chemicals in articles/products and on available alternatives especially in developing countries and countries with economies in transition having a low level of awareness.

7. The extent to which the issue is being addressed by other bodies

*The aim of this section should be to identify what **other bodies** have existing work programmes that address the issue.*

At many levels of the supply chain efforts have been invested to remedy the problem of the lack of information. Some of these systems could, potentially, provide a starting point for the development of a proposal for an information system or framework of systems. Examples of such systems can be found in the industry sector with the International Material Data System (IMDS), developed by auto manufacturers, or the Joint Industry Guide for Material Composition Declaration fro electronic Products (JIG). Other examples are consumer-oriented databases such as Electronic Product Environmental Assessment Tool (EPEAT) designed to facilitate decision-making when purchasing computers and monitors.

The OECD is in a limited way dealing with emission from articles. Pollution release and transfer register (PRTR) include today only direct point emission but are exploring diffuse emissions from other sources eg articles. However information flow to all stakeholders in the supply chain are not included in the OECD pilot study within PRTR. Regulatory initiatives exists on a sub-regional level.

Recovery of disposed articles is important but only possible to do in a safe way if the contents of hazardous substances are sufficiently known. In that aspect there are connections between better information on chemicals in articles and the aim of the *Basel convention* to protect human health and the environment against the adverse effects resulting from generation, management, transport and disposal of waste.
Better information on chemicals contained in articles would increase the possibilities to reach the goals of the Basel convention.

An additional result of addressing this issue could be the creation of synergies between the SAICM and the *Marrakech process on Sustainable Consumption and Production (SCP)*, which addresses inefficient use of natural resources. Obvious connections between sustainable use of chemicals and sustainable production of articles include the implications regarding recycling possibilities for articles that contain hazardous chemicals. Better information on chemicals contained in articles would increase the possibilities to reach the goals of both the SAICM process and the Marrakech process.

For substances and mixtures the need for information to professional users and consumers is rather well established. Systems for dissemination of hazard information

have existed in several countries for many years and lately a *globally harmonized system for classification and labelling, GHS*, has been established. This system does not comprise chemicals in articles. However, the classifications developed within GHS may be useful for the further elaborations on chemicals in articles.

8. The feasibility of the action proposed

*This section should briefly identify the **actions proposed in the original submission** and the range of **cooperative actions subsequently identified and discussed in the preparation of the information paper, together with their supporting rationale.** How the **proposed actions relate to the functions of the Conference** should be highlighted together with **how the actions may contribute to implementation of the Strategic Approach** (e.g., relevant section of the Overarching Policy Strategy).*

*This section should summarize **the views that have been expressed during the preparation** of the information paper on the actions identified.*

Detailed objectives have been set in order to contribute to the overall objective of the SAICM[5] and with regard to knowledge and information it is stated that information on chemicals throughout their life cycle, including chemicals in articles should be made available, accessible, user friendly, adequate and appropriate to the needs of all stakeholders. Appropriate types of information include their effects on human health and the environment, their intrinsic properties, their potential uses, their protective measures and regulation.

The emerging policy issue of information needs on chemicals in articles is closely related to the strategic objective 15 in the Overarching Policy Strategy of SAICM which in short aims to ensure that: "information on chemicals throughout their life cycle including where appropriate, chemicals in products, is available, accessible, user friendly, adequate and appropriate to the needs of all stakeholders….".

Even though information on chemicals in articles is one of the priorities in the overarching policy strategy and global plan of action of SAICM there is a need for more elaborated guidance on how such information can be disseminated. The European Union has therefore submitted the issue of information need for chemicals in articles as an emerging policy issue for consideration at the Second International Conference on Chemicals Management (ICCM2) in May 2009. Similar proposals have also been submitted by the government of Japan. The IFCS submission on chemicals in toys as an emerging policy issue is linked to the need for information.

[5] The overall objective of the SAICM is to achieve the sound management of chemicals throughout their life-cycle so that, by 2020, chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment

The need for information of substances in articles is one of four emerging issues selected for detailed considerations at the second session of ICCM in May 2009. The original submission from the EU on this topic proposes to initiate a process aiming at elaborating a proposal for information systems relating to the chemical contents of articles. In initiating such process it is important to find a balance on what is necessary and what is over-burdening.

At the workshop in Geneva the need for international cooperation was acknowledged as needed to ensure global harmonization of information flow and access, avoid the creation of a patchwork of information systems and maximize the benefits to all stakeholders.

As found in the report from the informal Workshop on stakeholders information needs on chemicals in articles the participants concluded that :

- current efforts and capacities to provide information about chemicals in articles/products and alternatives are not sufficient for informed decision making to protect human health and the environment throughout the life-cycle of articles/products
- for effective and efficient information generation and accessibility, cooperative action is needed at all levels (international, regional, sub-regional, national and intersectoral) with the involvement of all relevant sectors
- international cooperation on this issue is essential and urgent action is needed to ensure global harmonization of information flow and access, avoid the creation of a patchwork of information systems and maximize the benefits to all stakeholders
- improved information flow stimulates development of new articles/products and processes through innovation, reduces business risks and has economic benefits

For that reason the workshop participants recommends that :

- a working group be established by the ICCM at its second session that responds to the need for information on chemicals in articles/products in the supply chain and throughout the life-cycle with a mandate to review existing information and develop a proposal for an information system or framework of systems and/or actions

For more details on the task of such working group and how the group may conduct its business it is referred to the 2 page paper on suggested co-operative actions and to the workshop report.

9. Other relevant information

*In this section, facilitators may wish to draw attention to **other relevant information** that would be needed for the Conference to fully appreciate the issue.*

- The background study “Toxic Substances in Articles: the Need for Information”, that was prepared for the informal Workshop held in Geneva February 2009 and presented at a side event at ICCM2, (available http://www.norden.org/pub/sk/showpub.asp?pubnr=2008:596)

- Report from Informal workshop on stakeholder’ information needs on chemicals in articles/products Geneva, 9-12 February 2009

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Draft 17 February 2009
Prepared by Oladele Osibanjo

FOR COMMENT UNTIL 25 FEBRUARY 2009

Draft document setting out possible cooperative actions on electronic waste

The issue of electric and electronic waste should be addressed through a successful implementation of the 3R approach (reduce, re-use and recycle) of electric and electronic equipment. With this aim, there is need to target electronic products through a lifecycle approach. Since 2004, the parties to the Basel Convention have been dealing with this issue and have been involved with the development of international policies to target the problems related to the management of electric and electronic wastes.

The Basel Convention has a particularly well developed structure to deal with problems related to e-wastes not only because it is a forum which has accumulated a substantial experience in addressing political, technical and legal issues. The Basel Convention also possesses the legal structure to address the transboundary movement and the environmentally sound management of e-wastes, which are two essential elements for successful international governance in this issue. Furthermore, the Basel Convention has the necessary mandate to address the issue and has the possibility to develop and enhance partnership programmes in relation to the topic.

In order to continue enhancing governance mechanisms in relation to electric and electronic wastes, additional efforts are necessary to provide the right elements to ensure a strong commitment necessary to deal with the e-wastes issue. Governments are thus encouraged to integrate the topic of the e-waste in the new framework of the Basel Convention, a process that is intended to develop a strategy for the Basel Convention until 2020. Further efforts are also necessary to achieve consensus on the definition of e-wastes under the Basel Convention in order to further develop the framework of e-wastes. In addition, it is essential that governments reach a commitment in order to provide such efforts with the adequate financial resources for its successful implementation. There is need to develop tools that would encourage recycling companies to improve their environmental performance for example entailing a certification scheme, while guidelines for e-waste import and export should also be developed to prevent and or minimize dumping and illegal traffic.

Draft 17 February 2009
Prepared by Oladele Osibanjo (Nigeria).

FOR COMMENT BY 25 FEBRUARY 2009

Emerging policy issues

Draft information document on Electronic Waste

1. Introduction

The electrical and electronic equipment (EEE) sector is largely a globalized industry with production and assemblage occurring mainly in developed countries. EEE comprises electrical gadgets such as fridges, air conditioners, washing machines, microwave ovens; and electronic products such as computers and accessories, mobile phones, television sets and stereo equipment. The growth in global electrical and electronic equipment (EEE) production and consumption has been exponential in the last two decades, fuelled by rapid changes in equipment features and capabilities, decrease in prices, and the growth in internet use. This has created a large volume of waste stream of obsolete electrical and electronic devices (WEEE or e-waste) in developed countries. With the globalization of trade in e-waste, there is high level of trans-boundary movement of electrical and electronic devices as secondhand or end –of-life electronic equipment into developing countries in an attempt to bridge the 'digital divide'.

E-wastes contain several toxic substances including heavy metals such as lead, nickel, chromium, mercury and organic pollutants such as polychlorinated biphenyls (PCBs), and the common flame retardants. Thus globalization of e-waste has environmental and health implications in the downstream end of the EEE supply chain entailing disposal of waste, as developing countries are economically challenged, lack the infrastructure for sound hazardous waste management including recycling, or effective regulatory framework for toxic chemicals and wastes management. Furthermore there is pervading low public awareness of the hazardous nature of e-waste with the use of low-end or crude waste management techniques. The fast growing volume of e-wastes imports in developing countries whether in a form of post-consumer goods or end-of-life equipment imported or generated domestically require the development of sound capacity to prevent, minimize, re-use, recycle or recover materials from such wastes and to dispose of the residues arising from these operations in an environmentally sound manner.

This discussion of e-waste as a global challenge examines the current situation, challenges and opportunities, dilemma of developing countries and the way forward for pragmatic policy and regulatory interventions for sound management of the waste with minimum risks to the environment and human health.

2. BACKGROUND

The Africa region proposed e-waste as one of four emerging issues for consideration at ICCM2 from its second regional meeting on SAICM, held on 16-17 July 2008. This paper was prepared by the Basel Convention Coordinating Centre for the African Region in Nigeria and the Government of Peru [in consultation with the following stakeholders …… to add]. It was developed taken into account information collected by the Secretariat of the Basel Convention, other international organizations such as the United Nations Environmental Programme (UNEP) and the World Bank, as well as information in scientific literature.. The paper was also developed taken into consideration emerging

results of the implementation by the Basel Convention Regional Centres of various regional projects on electric and electronic wastes between the year of 2004 and 2009. The paper has been placed in the public domain through the SAICM website to elicit inputs from stakeholders to enrich the document. A teleconference is planned to afford all stakeholders an interactive forum for another consultation on the issue.

The conclusions of this paper will also be presented at the side event of the Secretariat of the Basel Convention entitled "Electric and electronic wastes and the Basel Convention Regional Centres"

3. MAGNITUDE OF THE PROBLEM

E-waste is one of the topical environmental issues of the 21st century. It has been identified as the fastest growing waste stream in the world, forecast to reach soon 50 million tonnes a year, while its generation is estimated at three times the rate of municipal solid waste. According to EMPA (2007a) electronic wastes or "e-waste" are those electrical equipment or electronic of which the user has decided to undo, including all the components, sub assemblies and articles of consumption that comprise of the product at the moment at which they are rejected. These have been classified in ten categories of electrical and electronic devices.

3.1 Material Flows in Computers

In recent years, significant international transboundary movement has evolved in used and end – of life personal computers and accessories, computer hardware, home appliances, old electric devices, CD players, radio, fans, fluorescent tubes, medical equipment, television, transformers, switch boards and used mobile phones that have been transported from developed to developing countries , for the removal of usable parts, for repairs, refurbishment, reuse and for processing for the recovery of raw materials. Relatively cheaper labor costs, weak environmental occupational laws and regulations have made developing countries attractive as the destinations for e-waste export from developed countries. Import and export statistics provided by Parties to the Basel Convention for the year 2000 show that there were imports of more than 17.5 million tonnes and export of 1.6 million tonnes designated as used electrical and electronic assemblies or scrap.

In the European Union the total weight of electronic appliances available on market in 2005 exceeded 9.3 million tons. Among these electronic appliances are 48 million personal computers (desktops and laptops); 32 million television displays and 776 million lamps[1]. The growth of the PC industry started in the early 1980s and by 1989, an estimated 21 million PCs were sold worldwide; in 1998 this figure reached 93 million. This exponential increase in the sale of PCs can be partly attributed to three factors: (i) the decrease in the PC price, (2) the emergence of the internet in the early 1990s, and (3) the rapid increase in the raw processing power of desktop computers (Campbell and Hasan, 2003). In 2001, there were over 300 million internet users worldwide and this, was estimated to increase to more than 500 million users by 2003 (Fichter, 2003).

Most developing countries are currently undergoing a rapid advancement in information and communication technology (ICT) through the use of computers. A very significant proportion of ICT users including internet services in developing countries rely on secondhand equipment from developed countries, primarily from Europe and North America. Some of these countries manufacture or assemble computers locally to supplement imported computers while the relative proportion varies from country to country. Nigeria has a few companies assembling computers locally but production statistics is not available. Nonetheless about 95% of computers in use in Nigeria are imported. The

[1] UNU WEE Directive Review Study, 2007

country imports annually at least 5 million units/year of personal computers equivalent to 60,000 metric tons/year mainly from USA (45%) and European Union (45%) (BAN 2005).

In China, about 14 million personal computers have been sold in 2005 in addition to 48 million television displays, nearly 20 million refrigerators and 7.5 million air conditioners in 2001[2]. India had an installed basis of 5 million personal computers in 2006. Electric and electronic waste is also a growing concern in South America where, since 2000, the use of personal computers in the region grows around 15% a year[3]. For example Peru manufactures locally about 75% of computers in use while the computer industry grew astronomically by 70% in 2007 (PERU Company 2007a).

3.2 Material Flows in Mobile Phones

The introduction of the global system of mobile communication (GSM) and the use of mobile phones have also revolutionized communication in both developed and developing countries. In July 2000, the Group of Eight Developed countries, G8, established the 'Okinawa Charter on Global Information Society' at the Okinawa Summit in Japan. This is an initiative to bridge the 'digital divide', aimed at improving the access to communication technologies in the world's poorer countries. This Charter and other similar initiatives have since revolutionalized information and communication technologies (ICT) in developing countries. Mobile phones serve not just as a personal luxury or an addition to traditional land line telephones, but also as a primary means of communication in areas of the world where communication infrastructure is not in place (BASEL/MPPI, 2004). Mobile phones fill a need for communication among billions of people in almost every country on the planet. They have created significant economic expansion in national and global economy, with employment creation and poverty alleviation.

In 2005, there were more than 1.32 billion GSM subscribers around the world connected to 626 GSM networks operated in about 198 countries worldwide (Scharnhorst et al., 2005).It was estimated that the number of mobile phones in use worldwide in 2003 was 1.3 billion and this was predicted to double by 2006 (Seliger, 2003).Recent reports from the International Telecommunication Union (ITU) suggest that Africa is the world's fastest growing market for mobile phones. Mobile subscribers on the continent by 2005 were estimated at 51.8 million, a staggering 1000% increase since 1998. The projected growth of the number of subscribers is put at between 100 and 200 million by the year 2010 (Finlay, 2005). This prediction will be surpassed as mobile phone subscribers in Nigeria has already reached 50 million in 2006, a record 10,000 increase since 2000. Importation of cheaper second hand sets from developed countries contributed significantly to the widespread availability and use of phones by all segments of the society including both the affluent and the common man.

Data is however scarce on the in-flow of new computers and other EEE from the original equipment manufacturer (OEM). A major challenge in ascertaining the material flow of EEE is the lack of reliable national data on EEE import and export in developing countries. Existing database does not distinguish between new, used and end-of life mobile phones and computers.

3.3 E- waste generation and management

Worldwide about 500 million personal computers (PCs) reached the end of their life (EoL) in the decade between 1994 and 2003 and these contain approximately 2,870,000 ton of plastics, 718,000

[2] W. He et Al., WEEE recovery strategies and the WEEE treatment status in China. Journal of Hazardous Materials B136 (2006) 502-512.
[3] World Development Indicators Database

ton of lead, 1,363 ton of cadmium and 287 ton of mercury . Most of these EoL will end up as waste in developing countries releasing their toxic constituents, endangering the environment and human health. E-waste is growing at a rapid and uncontrollable rate and is the fastest growing portion of the municipal solid waste stream. Currently WEEE constitutes 1% of municipal waste in the US (Li et al., 2006) and 4% in the EU (Yla-Mella et al., 2004). As these PCs become obsolete, they are replaced and the old PCs are disposed.

Personal computers (PCs) constitute the second largest component next to Cathode Ray Tubes (CRTs) in the e-waste stream and are growing most rapidly. PCs also contain the largest amount of printed wiring board (PWB) among electronic products. The cathode ray tubes (CRTs) in computer monitors and televisions contain about 8% lead by weight ; amounting to about 2–4 kg of lead each (Powel, 2002). Computer CRTs present a disposal problem because of their growing magnitude in the waste stream and their role as a major source of Pb in Municipal Solid Waste (MSW) (Musson et al., 2000; Lee et al., 2000). Consumer electronics accounts for 27% of Pb discards in MSW in 1986 in the US and is projected to comprise 30% of lead discards by 2007. By 2000, CRTs were projected to contribute 29.8% of all Pb in MSW or approximately 98.7% of all Pb from electronics (Musson et al., 2000). Lead is included in CRTs for various reasons among which is providing shield necessary for x-rays ((Lee et al., 2000).

Efficient recycling is dependent, to a large degree, on the possibility to trade recyclables internationally because no one country possesses the skills, capacity or infrastructure to reuse, recycle or recover the immense variety of recyclable materials. As a consequence, the market is driving recyclables across borders faster than the development of policies, safeguards and legislation. (Portias 2009). Perhaps the challenge of complying with stringent environmental safeguards and controls; and the economic costs in developed countries are responsible for the adoption of the easier option of exporting e-waste to developing countries and further fuel the increase in the globalisation of trade in waste.

According to estimates, between 50% and 80% of e-waste collected for recycling in the developed countries each year is being exported, amounting to more than 10.2 million PCs (Romanand Puckett, 2002; BAN/SVTC, 2002; BAN, 2005). It can be assumed that the disposal of obsolete electronic products is fundamentally driven by the production of new ones. This implies that the growth in global electronic production of 4.4% in 2002, and 6.8% in 2003 will result in similar growth in e-waste generation (Williams, 2005). Currently the main route of disposal of e-waste in most developed countries is through export to developing countries in the name of ‘bridging the digital divide’. Too often, justifications of ‘building bridges over the digital divide’ are used as excuses to obscure and ignore the fact that these bridges double as toxic waste pipelines to some of the poorest communities and countries in the world.

The recent Basel Action Network (BAN 2005) coordinated study in Nigeria –Exporting Reuse and Abuse to Africa- revealed the level of transboundary movement of secondhand and scrap EEE into developing countries exemplified by Nigeria. Estimated 5 million PC units, with a weight estimated at 60,000 metric tons is imported annually into Nigeria through the major sea port of Lagos only. The BAN study observed that about 25–75% of the imported secondhand computer wares are unusable junk that are non-functional or unrepairable (BAN, 2005). This amounts to an importation of 15,000–45,000 tons of scrap recyclable electronic components, which may contain as much as 1000–3,600 tons of lead. In Nigeria, there is virtually no capacity for material recovery operations for electronic waste, as a result of which these items become discarded in local dumps. Assuming this trade continues unabated, with an annual increase of 10%, then an estimated 40 million units of PCs or monitors (or 468,000 metric tons of e-scrap) would have been imported over the period 2005–2010. This will amount to an importation of about 40,000 metric tons of Pb for the period under consideration or 77,000 tons of e-scrap/year. Secondhand computer wares are also imported through

donations by charities to organizations and educational institutions (a minor source of import) which imports have also been found to contain 20-80% junk.

In the case of mobile phones, for example, its use has grown exponentially from the first few users in the 1970s, to 1.76 billion in 2004, and more than 3 billion in April 2008[4]. Eventually these mobile phones will be discarded, whole or in parts. In developed countries this quite often takes place sooner before they cease to operate. According to some recent studies, the first owner will generally replace their mobile phone within two years because they want newer features or because the older phones are incompatible with new services. In addition mobile phones are rapidly replacing fixed line phones in developing countries and countries with economies in transition. The result of that growth is a waste management problem when such phones reach the ends of their lives.

The questions of how much e-waste is generated, from where and to where it is moving are difficult to answer. This is worsened by the current system of gathering information in which second hand used and waste products are by and large invisible to national statistics in production, sale and trade-in goods. Hong Kong and Australia were the first to develop guidelines for distinguishing between used goods and e-waste (Kojima, 2005).

Most developing countries have neither a well-established system for separation, storage, collection, transportation, and disposal of waste nor the effective enforcement of regulations relating to hazardous waste management (Mundada et al., 2004).They do not have legislation dealing specifically with e-waste and there is lax enforcement of existing laws dealing with general waste management. Formal recycling of e-waste using efficient technologies and state-of-the-art recycling facilities are rare. As a result electronic wastes are managed through various low-end management alternatives such as disposal and eventual burning in open dumps, backyard recycling and disposal into surface water bodies (Further, 2004). Furthermore waste management occurs in the informal sector of the economy involving thousands of poor people ignorant of the hazard of exposure to toxins in e-waste. The most vulnerable groups especially children and women are actively involved in e-waste scavenging and crude recycling activities.

E-waste contains valuable ferrous (e.g. iron), non-ferrous (e.g. aluminium, copper) and precious and special (e.g. gold, palladium, silver, indium, gallium) metals that can be obtained from dismantling of computer cases, frames, wires, cables and other components. The rising value of these materials makes recycling more economically viable and attractive (Oikos 2008). Crude recycling for e-waste is currently taking place for example in Asia-Pacific countries such as China and India, and in some African countries such as South Africa, Ghana and Nigeria. These crude 'backyard' recycling processes include open burning of plastics (to reduce waste volume) and copper wires (to salvage valuable metals, e.g. copper), and strong acid leaching of PWB (to recover precious metals) etc. These operations are usually carried out without use of personal protective equipment (PPE) or pollution control measures. . These crude material recovery processes have resulted in multimedia environmental pollution while exposing millions of people to toxins including (persistent organic pollutants POPs, such as dioxins/furans [PCDD/Fs] as well as flame retardants [PBDEs]).

The problem of developing countries is compounded because infrastructure for solid waste management is weak and ineffective. Co-disposal of assorted domestic and hazardous wastes in open dump sites is generally practiced. Continual disposal of e-wastes on these hazardous dumpsites makes them a chemical time bomb if appropriate safeguards and regulatory control measures are not introduced and implemented sooner than later.

4. RELEVANCE OF THE THEME

[4] Source: www.gsmworld.com

While only a limited percentage of the worldwide population is covered by any kind of hazardous waste policies and measures, nearly the entire world is affected both in terms of environmental impacts and its health consequences towards its population. This is mainly due to the transboundary movement of hazardous wastes and the globalization of trade in e-waste.

Transboundary movement of e-waste is forecast to continue growing substantially as more and more countries produce or use electrical and electronic equipment. The rapid increase in exports and imports of electronic wastes leads to environmental pollution and contamination, loss of precious resources, illegal and unscrupulous traffic in end-of-life equipment, with the resulting health impact especially on vulnerable groups, environmental and economic negative consequences.

Many developing countries and countries with economies in transition, in particular, are confronted with the challenge of managing an increased volume of wastes properly. Growing demands of local populations for electrical and electronic equipment, coupled with a lack of adequate infrastructure to manage such wastes safely may encourage the continuation of the present unwholesome practice in which these wastes are burnt in open air or dumped into sewers, rivers or in the ground and without the use of safe practices to deal with the hazardous constituents therein. (for example Cadmium, lead, beryllium, CFCs, brominated flame retardants, mercury, nickel and certain organic compounds).

5. CROSS-CUTTING ISSUES

Electric and electronic equipment has improved the lives of people everywhere. As market expands and communities gain the benefits of electronic technologies, many developing countries face new challenges in managing electronic products at their end-of-life. All stakeholders, including original equipment manufacturers, consumers and recyclers, have a role in promoting environmentally sound management of used and end-of-life equipment.

The industry relates to the issue of electric and electronics in many aspects. The value of materials in discarded appliances varies across categories and products and consequently the economic impacts in taking back the electronics. The impact of different processing technologies and activities needed on the treatment of different e-waste flows varies (cooling and freezing, large appliances, CRT appliances, lamps, etc.). For this reason, economic impacts of downstream activities (collection, transportation, pre-processing, shredding, fractions separation, etc) are different and reflect different economic priorities.

In addition, end-of-life electric and electronic equipment have a social impact since its recovery and the reuse of its parts and materials is a valuable source of income to poor communities. The recovery of end-of-life equipment in developing countries can have a significant health and environment impact without compliance with labor standards. Therefore in many countries e-waste is both an emerging problem and an economic opportunity due to the growth of disposal of electronic devices that contain materials that are both toxic and valuable. In addition, the lack of regulation and law enforcement in the recycling and disposal of waste in most developing countries is a subject of concern due to the development of an unregulated informal sector that benefits from the growing e-waste business.

The management of e-waste in absence of control, often involves using techniques that are harmful to health and the environment. Most of the actors in the informal sector are not aware of the risks and unfamiliar with better practices on the management of electric and electronic wastes.

6. LEVEL OF KNOWLEDGE ABOUT THE ISSUE

In order to address environmental issues related to the increasing transboundary movements of these wastes, and to ensure their storage, transport, treatment, reuse, recycling, recovery and disposal is conducted in an environmentally sound manner, a proactive approach is essential. There is need to integrate stakeholders into an international strategy that should take into account regional trends in relation to the production, collection and disposal of electric and electronic wastes.

Numerous obstacles have been identified by countries in regard to their ability to manage e-wastes in an environmentally sound way. These include the lack of easily accessible information (on flows, quantities, available technology, legislative/trade requirements of countries importing new products, which will require increasingly strict standards for minimization and re-use, recycling and recovery). Furthermore there are international obligations that restrict or prohibit export or import of electronic hazardous waste for any purposes, including such waste destined for recycling. Many countries do not possess an adequate capacity to recycle electronic waste while some of the recycling plants taking electronic waste do not operate in a way to protect human health and the environment.

In order to address these challenges, experience has been acquired from the development of several projects and their implementation through the Basel Convention Regional Centres located in Argentina, China, Egypt and Indonesia. In this context, a number of strategic objectives have been identified in order to enhance the capacity of countries to manage electrical and electronic wastes in an environmentally sound way. These objectives are:

1) To assess the situation through the conduct of national inventories, the establishment of mechanisms for information exchange at the national and regional levels, and monitoring the impacts on human health and the environment of the activities related to the management of electrical and electronic wastes;
2) To focus on the prevention and minimization of e-wastes through the establishment of goals, both intermediate and long-term, to reduce the quantity of electrical and electronic wastes ending up in landfills;
3) To facilitate the introduction of cleaner production approaches to minimize and to eliminate hazardous substances in Electrical and Electronic Equipment (EEE) and consequently their wastes;
4) To promote Environmentally Sound Management to be achieved by promoting best practices and the use of sound recycling technologies adapted to national specificities, including the development of appropriate methods for evaluation, testing, characterizing and classifying e-wastes;
5) Promote information and training through the establishment of a regional information collection and dissemination clearing house accessible to all concerned stakeholders, including the development of training curricula for trainers.

6.1 THE INTERNATIONAL GOVERNANCE ON E-WASTES

Electrical and electronic wastes (e-wastes) are classified in the Basel Convention as Annex VIII entries A1180, A1150 and A2010 as well as under Annex IX as B1110. Basically, e-wastes are characterized as hazardous wastes under the Convention when they contain components such as accumulators and other batteries, mercury-switches, glass from cathode-ray tubes and other activated glass, PCB-capacitors or when contaminated with cadmium, mercury, lead or PCBs. Also, precious ash from incineration of printed circuit boards and glass waste from cathode-ray-tubes and other activated glasses will be characterized as hazardous wastes.

E-waste is also a priority waste stream identified in the current Basel Convention Strategic Plan (2002-2011) adopted at the sixth meeting of the Conference of the Parties to the Basel Convention and in the

"Ministerial Statement on Partnerships for Meeting the Global Waste Challenge" adopted at the seventh meeting of the Conference of the Parties to the Basel Convention in October 2004. In view of the emerging challenges related to electric and electronic waste, at the eight meeting of the Conference of the Parties to the Basel Convention (COP8) in December 2006, the theme of the meeting was "Creative and Innovative Solutions through the Basel Convention for the Environmentally Sound Management of Electronic Waste", this theme was debated on the "World Forum on E-waste" that took place during the COP 8.

The COP 8 also adopted the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste. The Nairobi Declaration underlines the fact that the Basel Convention provides and effective framework for developing strategic partnerships to continue discussing and exchanging views and experiences with a view to continuing improving the environmentally sound management of e-wastes worldwide. Also, COP 8 adopted the decision VIII/2 on Creating Innovative Solutions for the Environmentally Sound Management of E-waste.

The Conference of the Parties to the Basel Convention continued its work in regard to electric and electronic wastes in 2008 at the ninth meeting of the Conference of the Parties (COP 9) where a Work plan for the Environmentally Sound Management of E-wastes was adopted through decision IX/6.

The Nairobi Declaration on the Environmentally Sound Management of Electric and Electronic Waste recognized the need to encourage and support strategic partnerships initiated within the context of the Basel Convention targeting e-waste with a view to improving the environmentally sound management of e-products worldwide. In this context, two initiatives were developed under the Basel Convention in order to foster the participation of the private sector in the efforts towards the environmentally sound management of e-waste.

In 2002 the Mobile Phone Partnership Initiative (MPPI) was launched when 12 manufacturers signed a Declaration entering into sustainable partnership to develop and promote the environmentally sound management of end-of-life mobile phones. In addition three telecommunication operators also signed a Declaration entering into sustainable partnerships in July 2005. The overall objective of the MPPI work programme, which involved many stakeholders besides the partners, was to promote the objectives of the Convention which are applicable to the issue of end-of-life mobile phones. In particular the MPPI Work Program aims to:

a) Achieve better product stewardship;
b) Influence consumer behavior towards more environmentally friendly actions;
c) Promote the best refurbishing/recycling/disposal options;
d) Mobilize political and institutional support for environmentally sound management;
e) Result in an initiative that could be replicated to build new public/private partnerships for the environmentally sound management of hazardous and other waste streams.

Most recently the Partnership for Action on Computing Equipment (PACE) was adopted, together with its work plan, at the ninth meeting of the Conference of Parties to the Basel Convention. It was created as a multi-stakeholder partnership between industry, government, academia and civil society to address the environmentally sound management of used and end-of-life personal computers. The proposed scope of work and structure of the PACE is developed through an interim group comprised of representatives of personal computer manufacturers, recyclers, international organizations, academia, environmental groups and governments.

The objective of the PACE is to provide new and innovative approaches for addressing emerging issues on used and end of life computing equipment. It also aims to:

a) Promote sustainable development for the continued use, repair and refurbishment of used personal computers in developing countries;

b) Find incentives and methods to divert end-of-life personal computers from land disposal and burning into commercial material recovery operations;
c) Develop technical guidelines for proper repair, refurbishing and recycling, including criteria for testing, labeling and certification of environmentally sound repair, refurbishment and recycling facilities;
d) End shipment of useless personal computers to developing countries.

Other international initiatives on the sound management of e-waste include Solving the E waste Problem (StEP) of the United Nations University UNU and UNESCO, as well as the appropriate European Union directives (WEEE, RHOS), but links among them are weak. Many web sites and portals (for example EMPA, UK Government, PACE, StEP)) exist, but there is a need for a mechanism to integrate the information provided by these networks. Many institutions also are doing good work on electronic waste but too often are not interconnected (for example Oeko-Institut, IGES, Oakdene Hollins, Arizona State University). Many industries and industry organizations have taken action to improve the environmental performance in regard to electronic waste (for example HP, Intel, BIR, ISWA). Finally, NGOs have played and continue to play a key and active role in promoting global awareness on e-wastes issues (for example BAN, SVTC).

7. PROPOSED ACTION

The issue of electric and electronic waste should be addressed through a successful implementation of the 3R approach (reduce, re-use and recycle) of electric and electronic equipment. With this aim, there is need to target electronic products through a lifecycle approach. Since 2004, the parties to the Basel Convention have been dealing with this issue and have been involved with the development of international policies to target the problems related to the management of electric and electronic wastes.

The Basel Convention has a particularly well developed structure to deal with problems related to e-wastes not only because it is a forum which has accumulated a substantial experience in addressing political, technical and legal issues. The Basel Convention also possesses the legal structure to address the transboundary movement and the environmentally sound management of e-wastes, which are two essential elements for successful international governance in this issue. Furthermore, the Basel Convention has the necessary mandate to address the issue and has the possibility to develop and enhance partnership programmes in relation to the topic.

In order to continue enhancing governance mechanisms in relation to electric and electronic wastes, additional efforts are necessary to provide the right elements to ensure a strong commitment necessary to deal with the e-wastes issue. Governments are thus encouraged to integrate the topic of the e-waste in the new framework of the Basel Convention, a process that is intended to develop a strategy for the Basel Convention until 2020. Further efforts are also necessary to achieve consensus on the definition of e-wastes under the Basel Convention in order to further develop the framework of e-wastes. In addition, it is essential that governments reach a commitment in order to provide such efforts with the adequate financial resources for its successful implementation. There is need to develop tools that would encourage recycling companies to improve their environmental performance for example entailing a certification scheme, while guidelines for e-waste import and export should also be developed to prevent and or minimize dumping and illegal traffic.