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ENVIRONMENT DIRECTORATE
ENVIRONMENT POLICY COMMITTEE

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Working Group on Environmental Information and Outlooks

OECD WORKSHOP ON MATERIAL FLOWS AND RELATED INDICATORS

Chair's Summary

17-18 June 2004
Helsinki, Finland

This document summarises the results of the OECD WGEIO workshop on material flows and related indicators (Helsinki, 17-18 June 2004). It was prepared by the Chairman of the workshop and of the WGEIO, Mr. Yuichi Moriguchi (Japan).

It gives an overview of the proposed scope and level of ambition of joint work in the OECD on material flows and related measurement tools, including accounts and indicators.

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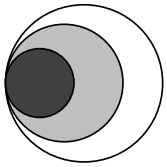
OECD Working Group On Environmental Information And Outlooks (WGEIO)

HELSINKI WORKSHOP ON MATERIAL FLOWS AND RELATED INDICATORS
17-18 June 2004



CHAIR'S SUMMARY

I. Background

Following the adoption by OECD Environment Ministers and the OECD Council in April 2004 of a Recommendation on Material Flows and Resource Productivity, a workshop on material flows and related indicators was held on 17-18 June 2004 under the auspices of the OECD Working Group on Environmental Information and Outlooks (WGEIO) and in co-operation with the OECD Working Group on Waste Prevention and Recycling (WGWPR). It was hosted by the Ministry of Environment of Finland at the Finnish Environment Institute and was chaired by Mr. Yuichi Moriguchi (Japan), Chairman of the WGEIO.

The aim of the workshop was to help translate the OECD Council Recommendation into an OECD programme of work, and to gather views from member countries of the OECD on the orientation and scope of joint work within the OECD on material flows and related measurement tools. Such work is expected to support the OECD's policy analysis and evaluation work, and in particular i) the measurement of environmental performance with respect to the efficiency of material resource use and the implementation of related policies (eco-efficiency, resource productivity, sustainable materials management, waste prevention), and ii) the monitoring of decoupling of environmental pressures from economic growth. Hence, it will also contribute to the OECD's horizontal work on sustainable development.

The workshop was attended by more than 50 participants, including national delegates, experts from research institutes and international organisations, and observers from industry and environmental NGOs.

II. Summary of workshop discussions

The discussions identified the most promising areas for OECD work, building on experience so far[1] in OECD, individual member countries and other international fora, and outlined next steps and expected outputs by 2007. They also proposed many other challenging areas which require longer term efforts. They confirmed the need for a modular approach to future work on material flows (MF) distinguishing:

- core work within the OECD, i.e. areas where progress can best be obtained through joint efforts in the OECD and by OECD countries as a group using a commonly agreed upon framework; and
- additional and/or more detailed work in areas where progress can best be achieved through specific national efforts, through case studies carried out in collaboration by member countries sharing common interests or through co-operation with other international fora.

[1]. The discussions built in particular on the results of i) the Special session on material flow accounts organised by the WGEIO (October 2000) back to back with a seminar on waste material flows organised by the WGWPR, and ii) the International Expert meeting on MFA and resource productivity organised by the Ministry of the Environment of Japan (November 2003).

In the course of the discussion, participants made several general points. First, material flow accounts (MFA) are an information tool with many potential uses and users and can lead to a variety of public and private policies and actions. Second, while there is real interest across the OECD countries in MFA, the countries are at a variety of stages in developing and using MFA. Full development will take some years and each country will need to decide what is appropriate for its circumstances. The OECD can provide useful guidance. Third, attention is needed on both the "supply side" (how MFA can be constructed) and on the "demand side" (how MFA can be interpreted and used).

Supply side

1. Overall scope and working boundaries for joint work within the OECD

Core work within the OECD is expected to concentrate first on the national and macro-economic level and on the compilation of simple accounts that allow the derivation of selected economy-wide indicators and the calculation of related aggregates for the OECD as a whole and for OECD regions.

Priority should be given to the measurement of direct flows[2]. It is recommended that transboundary and trade related flows be covered in a systematic way. The measurement of hidden flows –unused domestic extraction and indirect flows associated with imports– is seen as important in the OECD context, but requires longer term work to improve data availability and comparability. Work in this area should receive lower priority in the short term, but could benefit from voluntary efforts by countries sharing common interests.

It is suggested that the development of economy-wide MF indicators for use in OECD work cover the full material flow chain and be structured within the PSR model to highlight the complementarities among various types of indicators and the way they relate to environmental themes. In order to serve both communication purposes and analytical purposes, it is suggested to identify a few key indicators as well as a small set of more detailed core indicators. Both absolute indicators and efficiency indicators are needed. Work may concentrate first on input indicators that are generally easier to measure. Output indicators requiring longer term work should be developed in parallel, but could be given lower priority in the short term. Consumption indicators attract increasing attention but require further refinement and methodological work.

2. Level of aggregation for joint work within the OECD

Work on economy-wide MF accounts and indicators should be complemented with a breakdown by major economic activity sectors and by material groups to increase policy relevance, ease interpretation, and facilitate the establishment of links with economic indicators and information systems. The level of detail of disaggregated information and the selection of grouped or individual material flows whose monitoring should be given special attention depend on the type of indicator used. They will need to be further specified in accordance with the purposes for which the results of MF studies and related indicators are to be used in OECD work.

In the short term, it is suggested to give priority to the measurement of high volume flows and concentrate on main material groups (e.g. ferrous metals, non-ferrous metals, construction minerals, wood biomass, fish biomass). This should be complemented as and when appropriate with information on low volume flows raising specific environmental concerns (e.g. with a high specific toxicity). In this context, the usefulness of other monitoring and assessment tools, such as Pollutant Release and Transfer Registers or OECD work on chemicals and risk assessment, needs to be explored.

The separate measurement of flows of "secondary, i.e. recycled or reused" materials is seen as highly relevant, but requires longer term methodological and measurement work. Progress in this field

[2] Flows of materials physically entering the national economy for further use in production or consumption processes.

could be pursued in parallel if supported with case studies carried out on a voluntary basis by individual countries in a collaborative way.

3. Development of common material flow accounts and indicators

Core work should focus on supporting and encouraging countries to prepare national material flow data under a common accounting framework as a basis for calculating a harmonised core set of practical MF indicators. This needs to be accompanied with further conceptual, methodological and analytical work to provide harmonised guidance to countries and achieve greater convergence of individual initiatives. It should build as much as possible on existing work and experience, be consistent with the System of integrated Environmental and Economic Accounting (SEEA) and be co-ordinated with ongoing and planned methodological work by Eurostat[3].

Expected outputs include the preparation of a guidance document, including both guidance on methodological and measurement issues related to the development of MF accounts and indicators, and guidance on the interpretation and use of MF indicators. The guide should be constructed in a modular way to reflect several levels of ambition and completeness of accounts, including a didactic or instructive part with a set of simple economy-wide MF accounts to allow newcomers to join in. It should include an overall standard framework for MFA that helps understanding the links among different types and levels of MF approaches and measurement tools and the different purposes for which they can be used.

Further conceptual and methodological work is needed to:

- agree upon a consistent terminology building on a common language and understanding of concepts;
- define common harmonised system boundaries that should parallel those of economic accounts;
- move work forward in specific areas such as:
  i. the measurement of output flows (in particular solid waste) and secondary (recycled) materials;
  ii. the measurement of indirect flows (domestic and trade related);
  iii. the definition and measurement of consumption indicators;
  iv. the development of common conversion factors and coefficients;
  v. links with economic accounts, with monetary and physical input-output tables;
  vi. links with environmental pressures and impacts;
- provide harmonised guidance on how to select, define and calculate MF indicators, optimise related statistical work and enhance international comparability.

Such work could be supported with workshops and with mechanisms that facilitate technical exchange among experts (electronic discussion groups, clearinghouse), and be carried out in close co-operation with Eurostat, whose guide could serve as a starting point.

Development of detailed country specific accounts and indicators

Participants stressed that additional technical guidance and exchange of experience would be welcome to support those countries that wish to establish more detailed, country-specific accounts (e.g. sector or substance specific). Such work is however expected to require longer term efforts and should build as much as possible on work in progress in other international fora. The actual development of more detailed accounts and indicators and their application at sub-national level or micro-economic (enterprise) level should be mainly the responsibility of individual countries, but could be supported with case studies and forum discussions and be steered and co-ordinated by the OECD.

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[3] . *Economy-wide material flow accounts and derived indicators – A methodological guide*, Eurostat, 2000 ; *Integrated Environmental and Economic Accounting 2003- Handbook on national accounting*, United Nations, European Commission, IMF, OECD, World Bank, 2003

Demand side

4. Use and interpretation of material flow indicators

Further analytical work is needed to improve the interpretability of MF indicators and to provide harmonised guidance on how to best use and interpret such indicators. This is crucial if MF indicators are to be turned into a useful decision making tool, in particular in the case of aggregated economy-wide indicators. It should address the extent to which methodological issues, data quality and country-specific factors affect the interpretation, policy relevance and international comparability of different MF indicators. It should further identify the type of additional information and analysis that is needed to explain driving forces behind indicator changes and to relate MF indicators to environmental pressures and impacts and to resource management issues (use of renewable versus non-renewable resources; use of materials versus existing reserves and available resources; resource productivity; etc.)

5. Links and complementarities with other accounting tools and indicators

Participants stressed that while MFA is a powerful tool, which can serve several purposes, it is not a tool that can give all the insights needed and thus it should be appropriately positioned within a broader architecture of accounts and indicators. Links with other indicators derived from natural and other resource accounts (e.g. water; forest, land, energy) or describing specific environmental issues and decoupling levels are important, as are links with other environmental accounts (energy and water accounts in particular) and information tools (e.g. PRTRs, air emission inventories, waste statistics). These links and related synergies need to be better understood. They could be used to enhance the policy-relevance and interpretability of MF indicators, to relate MF indicators to environmental pressures and impacts, and detect shifts in environmental pressures from materials use between environmental media (air, land, water) or economic activity sectors.

Links with national accounts and their aggregates are especially important to provide an integrated information system as proposed in the SEEA framework. To facilitate such links the structure and system boundaries of MFA need to be compatible with those of national accounts. The level of detail of sectoral breakdowns that would be most relevant to facilitate links with economic information systems needs to be further discussed. It depends on the purpose for which the information is to be used and on resources available. Experience so far suggests that a NAMEA type of sectoral breakdown would be most suitable, and that existing classifications (IO-classification, FAO, Prodcom, ISIC) could be used as a starting point.

6. Identification and sharing of best practices

The discussions showed that much of the work completed to date has shed light on the supply side of MFA. Though many countries and international organisations have included MF indicators in their sets of environmental or sustainable development indicators, the actual use of MF information in policy making is still limited. This is due among others to the fact that the potential of MFA as a policy making tool is often not sufficiently known and that the meaning of various MF indicators is not always well understood by non-experts.

Hence, extra efforts are required to improve the relationship between the demand for and supply of MF information, promote the use of MF approaches at national level and make the potential of MFA as a policy tool better known. The identification of issue and policy areas to which MF indicators could best contribute and the sharing of good practices and successful applications of MFA, could support such efforts. Further exchange of experience would be particularly useful to identify best practices concerning institutional arrangements and partnerships and ways to enhance co-operation and communication between the various actors involved; as well as ways to improve the cost-effectiveness of MF work.

This could partly be handled through round table discussions or forum sessions as part of the regular meetings of the WGEIO, and partly through case studies carried out on a voluntary basis by individual countries and whose results could be shared and discussed among countries. Case studies should involve all relevant actors and should be carried out in a co-ordinated way. It is also suggested to establish a public OECD website on MFA to raise the visibility of MF work and inform about its potential as a policy making tool. This could further be supported with a bold vision of MFA to guide general expectations and work on MFA in the longer term.

III. Expected outputs, events and time lines

(based on OECD Council Recommendation and reflecting workshop discussions; to be further reviewed)

1. Expected outputs

- ***Scoping paper to guide OECD work on material flow analysis and related indicators*** (building on the results of the Helsinki workshop, on inputs received from member countries and on the results of a global survey on MF activities carried out jointly with the European Environment Agency).
- ***Brochure on material flow analysis and related indicators*** (serving communication purposes by giving a bold vision of MFA and explaining potential uses, etc. It would be targeted at users of MF information including policy makers, business and the public).
- ***Common framework and guidance document*** to assist countries in implementing and using common material flow accounts and indicators, addressing i) methodological and measurement aspects, and ii) aspects related to the use and interpretation of MF indicators. (could include examples of good practices and successful applications; should be consistent with the SEEA, should build on earlier joint research by Austria, Germany, Japan, the Netherlands and the United States and be carried out in close co-operation with Eurostat, whose guide could serve as a starting point).
- ***Selection and definition of common MF indicators*** for use in OECD work (to be included in the OECD Core Set of environmental indicators and in work on decoupling indicators).
- ***Measured MF indicators and underlying information base on major MF variables*** (data to be compiled from national and international sources).
- ***Report to the OECD Council*** on progress achieved by member countries in implementing the Recommendation within three years of its adoption (as requested in the OECD Recommendation on Material Flows and Resource Productivity)

2. Supporting processes

Core work is to be supported with workshops, by electronic discussion groups, and round table discussions or forum sessions as part of the regular meetings of the WGEIO and in co-operation with the WGWPR. It was also suggested to organise an international conference on MFA and related topics such as sustainable materials management in late 2006 or 2007.

Additional and/or more detailed work could be handled as appropriate by case studies carried out on a voluntary basis by joint efforts of individual countries and be co-ordinated by the OECD. It could benefit from co-operation or joint activities with other international bodies.

It is also suggested to establish a public OECD website on MFA, with links to other relevant sites (Eurostat, Wuppertal Institut, EEA, etc.), to raise the visibility of MF work and inform about its potential as a policy making tool.

3. International co-ordination and co-operation

The work will be carried out by the OECD Environment Directorate and will benefit from co-ordination and co-operation with partners within and outside the OECD:

- OECD: Statistics Directorate, Directorate for Science and Technology, Horizontal work on Sustainable Development
- European Union: European Commission (Eurostat, DG Environment), European Environment Agency and its Topic Centre on Waste and Material flows
- United Nations: UNSD, UNEP
- London Group on Environmental Accounting, Inter-Secretariat Working Group on Environment Statistics
- Non governmental institutions: e.g. World Resources Institute, Wuppertal Institut, Institute for Interdisciplinary Studies of Austrian Universities.

4. Events and time line (2004-2006)

Date		Event	Topics and related outputs
2004	June 17-18	WGEIO workshop (Helsinki, Finland)	Definition of scope and orientations of joint work within the OECD on material flows and related indicators Outputs: basis for OECD programme of work; draft scoping paper
	September	Expert Group on Sustainable Development	Discussion of draft scoping paper
	October 13-15	35th WGEIO meeting (Paris, France)	Discussion of draft scoping paper Exchange of experience on "demands for MFA"; discussion on "bold vision of MFA" Output: final scoping paper
2005	February 9-10	7th WGWPR meeting	first discussion of OECD works on sustainable materials management
	2nd quarter	WGEIO workshop (to be hosted by a member country)	Detailed review of methodological and measurement issues, and preparation of related guidance to countries Output: draft guidance document (Part 1. methodological guidance)
	4th quarter	36th WGEIO meeting (Mexico)	Review of draft guidance document (Part 1) Discussion of common MF indicators Output: final guidance document (Part 1); proposed set of MF indicators for OECD use
	4th quarter	WGWPR workshop	Sustainable materials management; could cover related indicators
2006	2nd quarter	WGEIO workshop (location de be defined)	Interpretation and use of MF indicators; links with other accounting tools and indicators Update of overview of MF activities in OECD countries Output: draft guidance document (Part 2. interpretation and use)
	4th quarter	37th WGEIO meeting (Paris, France)	Review of draft guidance document (Part 2) Review of draft report assessing progress with MFA and related indicators in OECD countries Outputs: final guidance document (Part 2); progress report

OECD Working Group on Environmental Information and Outlooks
WORKSHOP ON MATERIAL FLOWS AND RELATED INDICATORS

17-18 June 2004, Finnish Environment Institute, Helsinki, Finland
starting at 9:30 on the first day

AGENDA
Chair : Yuichi Moriguchi (Japan)

1. **Opening session**
   a. Opening statements
      - Finland — *Pekka Jalkanen, Director General, Ministry of Environment*
      - OECD — *Lorents Lorentsen, Environment Director*
   b. Introductory statements
      - Japan — *Yu MATSUNO, Meiji University*
      - European Union — *Frans Vollenbroek, DG Environment, European Commission*
      - United States — *Derry Allen, US-EPA*

2. **Taking stock:** updated overview of the development and use of material flow analysis at national and international level* — **Country/ institution submissions**

3. **Orientations and scope of work on material flows within the OECD** — **Issues paper** ENV/EPOC/SE(2004)1

   a. The Recommendation of the OECD Council on Material Flows and Resource Productivity — C(2004)79

   b. **Definition of working boundaries and level of aggregation**:
      - Presentation of main issues — *Yuichi Moriguchi (Japan)*
      - Views of lead countries — *Ilmo Mäenpää (Finland)*, *Karl Schoer (Germany)*
      - Discussion**

      rapporteur: Jenny Boshier

   c. Development of common methodologies and measurement systems
      - Presentation of main issues — *Stefan Bringezu (Wuppertal Institut)*
      - Views of lead countries — *Aldo Femia (Italy)*, *Angie Leith (United States)*
      - Discussion**

      rapporteur: Heinz Schandl, Nina Eisenmenger

   d. Interpretation and use, and links with other accounting tools and indicators
      - Presentation of main issues — *Derry Allen (US-EPA)*
      - Views of lead countries — *Jenny Boshier (Australia)*, *Rocky Harris (United Kingdom)*
      - Discussion**

      rapporteur: Marie Boucher, Stefan Bringezu

4. **Concluding session**
   a. Expected outputs, events and time line
   b. International co-ordination and co-operation
   c. Closing statements

* *Participants are invited i) to send to the Secretariat (in advance of the meeting) a list (1-2 pages) of ongoing and planned initiatives and projects in their country or organisation in the field of material flow studies and related indicators (type and scope of work, purpose and use, institutional set-up), and ii) to provide copies of relevant publications and other products (CD-ROMS, Internet addresses) to the OECD Secretariat.*

** *The discussions should focus on aspects that are of particular relevance for the translation of the Recommendation into an OECD programme of work.*

OECD Working Group on Environmental Information and Outlooks
Helsinki Workshop on Material Flows and Related Indicators

Groupe de l'OCDE sur l'Information et les Perspectives Environnementales
Atelier de Helsinki sur les flux de matières et les indicateurs dérivés

17 – 18 June 2004

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