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Policy issues: state of the environment

**Follow-up to and implementation of the outcomes of the
United Nations summits and major intergovernmental
meetings, including the decisions of the Governing Council**

**Report of the International Panel for Sustainable Resource
Management**

Note by the Executive Director

Summary

The Executive Director has the honour to present, in the annex to the present note, a report of the United Nations Environment Programme International Panel for Sustainable Resource Management. The Panel aims to provide decision makers and other interested parties with independent and authoritative policy-relevant scientific assessments on the sustainable use of resources and, in particular, on their environmental impacts over their life cycles. The assessments crystallize and evaluate the latest scientific, technical, social and economic literature on the use of natural resources, including minerals, biomass, water, land and soil, and energy resources. They also contribute to understanding ways in which economic growth can be decoupled from environmental degradation.

Since its launch in November 2007, the Panel, drawing on its broad-based expertise, has published three authoritative assessment reports, on biofuels, metal stocks in society and the environmental impacts of consumption and production. The reports have been well received by stakeholders, including decision makers in Governments and industry and civil society organizations.

In the coming years, the Panel will undertake a series of assessments on water, land and soil, cities and urbanization, recycling of metals, and technological opportunities and policy options for decoupling economic growth from environmental degradation, all of which are critical to poverty eradication, environmental sustainability and sustainable development. The assessments will provide up-to-date information and knowledge, setting out policy-relevant options and advice required for the decoupling of economic growth from environmental degradation and impacts.

The annex is presented as prepared by the Panel, without formal editing.

* UNEP/GC.26/1.

Annex

Report of the International Resource Panel

Contents

I. Introduction	3
A. Background.....	3
B. Objectives and programme of work.....	4
C. Organizational arrangements	4
II. Activities and achievements.....	5
A. The Completed Assessment Reports	5
1. Towards Sustainable Production and Use of Resources: Assessing Biofuels..	5
2. Metal Stocks in Society: a scientific synthesis.....	6
3. Environmental Impacts of Production and Consumption	7
B. Forthcoming assessment reports	8
1. Decoupling	8
2. Environmental Impacts	8
3. Sustainable Land Use and Soil Management	9
4. Further Assessments on Metals.....	9
5. Water Efficiency	9
6. Cities and Urbanization.....	9
C. Other activities	9
1. Capacity Building activities	9
2. Outreach and Communication.....	10
3. Cooperation with the Global Sustainability Panel	10
Appendix I – Members of the International Panel for Sustainable Resource Management ...	11
Appendix II – Steering Committee	13
Appendix III: Forthcoming Assessment Reports.....	14

I. Introduction

A. Background

Economic growth, poverty eradication and improvement of human well-being are closely linked to the exploitation of natural resources such as water, land, energy, forestry and minerals. Current ways in which natural resources are produced and consumed entail great wastes and cause severe environmental impacts. There are clear signs that we are approaching the limit of our planet's capacity to provide resources and other life-supporting goods and services if current trends are to continue.

Depletion of natural resources and degradation of the environment affect the vulnerable segments of society disproportionately because their survival relies heavily on the availability of resources and well-being of environment. In addition, their resilience capacity in responding to depleted resources, damaged eco system and a polluted environment is much weaker. **The sustainable management of resources is therefore a crucial element for ensuring delivery of sustainable development.**

In an increasingly globalised world, there is often a mismatch between where resources are extracted and produced and where they are consumed. Environmental impact associated with resource use is also trans-boundary through trade and other means. Coping with related challenges requires an integrated approach and concerted action to be taken in addressing sustainable management of natural resources.

The fundamental issue related to resource efficiency is how to improve the management of both production and consumption of resources in an environmentally responsible and socially equitable manner. Poor management contributes to natural resource depletion and waste generation, ecosystem destruction, pollution, and climate change. Resource efficiency depends on a variety of environmentally sound technologies and supportive policies to reduce resource use and environmental impacts per unit of production, as well as traded quantities and consumption over the entire life cycle and across different resources and sectors.

A better understanding of material and energy flows will help meet challenges associated with economic growth, habitat destruction, pollution, and climate change. Notwithstanding developments in environmental science and technology, results are often disputed and inconclusive. The technical nature of debate has impeded the integration of scientific findings into the effective management of natural resources and supportive policy. Up-to-date information and a comprehensive understanding of the nature and characteristics of resources and their interaction with economic sectors, environment and ecosystem and human behaviour are urgently needed in order to advance sustainable resource management and decoupling economic growth from resource use and environmental degradation. The establishment of the **International Resource Panel (IRP)** is a major step towards addressing this need. The International Resource Panel, launched in November 2007, serves as a science-policy interface. It provides coherent and authoritative scientific assessments of policy relevance on resources that enable improving resource efficiency and mitigating environmental impacts. These assessments use a holistic and life-cycle approach looking into availability and accessibility of resources, environmental and social impacts of resource use, and technological potentials and policy options to improve resource efficiency. They also consider both intra- and intergenerational equity embedded in resource production and consumption.

By providing policy-makers and other stakeholders with the latest information and cutting edge knowledge on sustainable resource management, the International Resource Panel consolidates the relation between resource efficiency and green economy, and contributes as well to the transition to Green Economy at the national, regional and global levels. The assessments that the International Resource Panel has undertaken so far in the fields of biofuels, metals flows and impacts of consumption and production, analyze environmental, economic and social costs and benefits as well as "trade-offs" between them which is necessary for Governments and public institutions, particularly in developing countries when looking for promoting a transition to a Green Economy.

B. Objectives and programme of work

The **overall objective** of this UNEP International Resource Panel is to provide coherent and scientific assessments of environmental impacts due to the use of resources over the full life cycle and make up-to-date and evidence based information available to governments, industries, civil society organisations and interested professional communities with regard to improving resource efficiency and reducing environmental impacts. The Panel aims to become a highly credible and respected institution, an independent body with high global visibility that looks to serving as the go-to-source for the best available scientific information on which to base decisions regarding sustainable resource management.

The **specific objectives** of the International Resource Panel are twofold:

- provide independent, coherent and authoritative scientific assessments of policy relevance on the sustainable use of natural resources and their environmental impacts over the full life cycle; and to
- contribute to a better understanding of how to decouple economic growth from environmental degradation

The International Resource Panel performs scientific assessment and analysis of policy relevance on resource use and emissions in a way that will look into the main drivers of impact on natural environment, drivers associated with economic processes in the form of consumption and production patterns, industrial input-output flows and trade between sectors and national economies. The analysis considers the use of both natural and inorganic resources, covering construction materials, minerals, energy resources (renewable and non-renewable), water, land and biomass. A life cycle approach and circular economy principles are followed considering best use of resources and minimizing of impacts from initial design to extraction/production, from transportation to processing, from recycling, reuse to final disposal.

The assessments encompass scientific analysis at least at three levels:

- macro-level scoping papers and analytical reports on resource production and use, considering economy-wide trends and linkages with economic growth and including policy-relevant conclusions for dissemination among decision-makers;
- preparation and dissemination of technical and scientific reports on sustainable resource management at the meso or industry sector levels, on priority resources (including materials such as metals) or product clusters;
- enabling capacity for sustainable resource management at the regional level with a focus on developing economies through outreach and capacity-building activities targeting decision makers and managers from Africa, Asia and the Pacific as well as Latin America and the Caribbean. Opportunities for training will be pursued through related expert networks and processes;

C. Organizational arrangements

The International Resource Panel consists currently of 26 internationally renowned senior scientists and experts from around the world, with almost the same number from developed and from developing countries (see Appendix I), covering a broad spectrum of disciplines and expertises. The scientists and experts are tasked with the preparation of assessment reports on resource issues that are of critical concern to the international community regarding environment and sustainable development. Their assessments provide accurate and cutting-edge knowledge for policy makers and other stakeholders allowing them to make informed decisions. When preparing an assessment report, the International Resource Panel reviews existing relevant literature. In addition to Panel members, other concerned and qualified experts from the international scientific community are invited to contribute and to add expertise as needed through the Working Groups and peer review process.

To ensure policy relevance and multi-stakeholder engagement, a **Steering Committee** was established, consisting of representatives from more than 20 Governments, International Organizations and organizations representing major groups such as business, academia and NGOs (see Appendix II). The Steering Committee provides strategic guidance and advice on matters related to direction and priority,

operational procedures, coordination and synergy with other international initiatives in the field of resource efficiency. It also serves as a bridge between the scientific assessment work of the International Resource Panel and policy-making process at the national and international levels.

UNEP hosts the **Secretariat** of the International Resource Panel and is responsible for the provision of overall direction and policy guidance, the formulation and execution of procedures, and the development and implementation of outreach and capacity-building activities. All partners are tasked with outreach and communication roles in order to disseminate the results of the International Resource Panel at the regional, national and sectoral levels.

To ensure scientific integrity and authority, the Panel has adopted a set of **rigorous procedures** for the selection of Panel members and contributing experts/institutions. In addition, procedures have been adopted regarding the conduct of assessments as well as peer review and the publication of reports.

All assessments of the Panel are subject to an independent peer review process that is led by a designated coordinator.

II. Activities and achievements

A. The Completed Assessment Reports

To date, the International Resource Panel has completed three assessment reports in three different areas of focus. These reports have all been in high demand since their launch, showing the relevance of resource issues addressed by the Panel and the demand for evidence based information and policy relevant assessment. Each of these reports is briefly described in the section below with their key messages summarized.

1. Towards Sustainable Production and Use of Resources: Assessing Biofuels

Biofuels have received much attention from decision-makers in governments and industries, civil society organizations and the general public world-wide. As the number of publications devoted to this renewable source of energy is expanding rapidly, it has become increasingly difficult for decision-makers to identify accurate knowledge and key messages on which to build their decisions. The International Resource Panel has responded to this challenge with its first assessment report: “Towards sustainable production and use of resources: Assessing Biofuels”.

This report, based on an extensive literature examination and a thorough review process, involving a great number of scientists and experts, resulted in a robust assessment of key problems of production and use of biofuels for energy purposes and options for more efficient and sustainable production and use of biomass. The focus was on the first generation biofuels, due to availability of state-of-the art reviews, but also considered further lines of development. It takes a global perspective, recognizing regional and local differences. The publication of the assessment report provides valuable food for thought to the international community that is concerned with biofuel, food security, land management and biodiversity. There have been more than 400,000 downloads of the report over the last year.

KEY MESSAGES OF THE REPORT ON BIOFUELS



Putting biofuels development into a broader perspective of resource efficiency and sustainable development, the report examines the interaction of biofuel production with a number of global trends, including population growth, changing nutrition patterns, yield improvements and climate change. The key findings of the report are as follows:

- Bioenergy, so far largely in the form of traditional use of biomass, is part of the energy mix.
- Long term sustainability of the bioenergy sector can only be achieved with sound policies and planning that take into consideration a range of global trends, including population growth, yield improvements, changing diet patterns and climate change.
- Not all biofuels perform equally well in terms of their impact on climate, energy security, and on ecosystems. Environmental and social impacts need to be assessed throughout the entire life-cycle.
- As future global biofuel demand is expected to increase, so is the demand on land. Land conversion for biofuel crops can lead to negative environmental impacts including implications such as reduced biodiversity and increased GHG emissions.
- Water is another limiting factor, both in terms of quality and quantity.
- There are avenues available to create more efficient and sustainable production of biomass, and thereby reduce environmental pressures.

Sustainable biofuel production can occur when strategies are implemented to increase resource productivity. Certain measures can reduce environmental pressures on natural resources and provide social benefits.

At <http://www.unep.fr/scp/rpanel/Biofuels.htm> the full report is available in English, with summaries available in English, French and Spanish and flyers available in English, French, Spanish, Chinese and Arabic.

2. Metal Stocks in Society: a scientific synthesis

Economic development is coupled with the use of metals and the growing demand for metals implies a permanent pressure on the resource base. Meanwhile the growing metal stocks in our society can serve as potential huge new mines above ground. Recycling is a way to mitigate negative impacts on increasing metal demand and to respond to potential increases for economic growth. In its first two metal reports, "Metal Stocks in Society: Scientific Synthesis" and "The Recycling Rates of Metals: A Status Report", the International Resource Panel examines the issue of mines above ground.

The continued increase in the use of metals over the 20th century has led to a substantial shift in metal stocks from below ground to the applications in society above ground. Such a shift raises a range of social, economic, and environmental issues that have to be addressed by quantifying the amount of metal stocks in society and their lifetime. For instance the average lifetime of copper in a building is 25 to 40 years afterwards the metal is ready for second phase mining.

The report provides reasonably detailed information of the in-use stocks for five metals, and less detailed but still useful information for nineteen other metals. Closing the information gaps about stocks in human society provides important information about the potential of metal recycling to supply future demand. The utilization of these growing metal stocks through recycling is expected to be an important source for future metal supply.

KEY MESSAGES OF THE REPORT ON METAL STOCKS IN SOCIETY



The continued increase in the use of metals over the twentieth century has led to a substantial shift from geological resource base to metal stocks in society. Such a shift raises social, economic, and environmental issues that require quantifying the amount of stock of "metal capital" (or stocks) utilized by society. The growing metal stocks in our society can serve as huge mines above ground. Studies show that on average, there are 2,200 kg/cap of Iron stocks in our societies, though this figure ranges from 7,000-14,000 kg/cap in more developed countries and 2,000 kg/cap in less developed countries. For Aluminium, the stocks in society are 80 kg/cap at the global level, ranging from 350-500kg/cap in more developed countries and 35 kg/cap in less developed countries. Estimates are also available for specialty metals, such as Cadmium (frequently used in batteries), where stocks measure 40 g/cap at the global level, and 80g/cap in more developed countries (specific data is not available for less developed countries).

Exploiting the potential of these secondary sources of metals can contribute to the reduction of the extraction of metals from primary sources. This would contribute to decoupling of resource use from economic growth. However, there are considerable data gaps regarding the size of these metal stocks and their recycling potential. These gaps have to be filled. The recycling rates of many metals are low. Open material cycles are typical for consumer goods like cars and electronics. Therefore, these product groups need special attention. Recycling rates are very low for specialty metals like lithium for which an appropriate recycling infrastructure still has to be developed. The development of recycling infrastructure, including technology and collection systems, needs to be supported by policy instruments such as research and development, economic incentives and capacity building activities.

Tapping the full potential of mining above ground and closing of material cycles with appropriate global infrastructure are essential to establish a green economy and to secure sustainable development.

The scientific synthesis on metal stocks in society is available at <http://www.unep.org/MetalStocks/>. Flyers in all official UN-languages are available at <http://www.unep.org/MetalStocks/>.

3. Environmental Impacts of Consumption and Production

Global economic activity drives an increasingly high level of consumption and production. In order to maintain production and consumption activities, the global economy relies upon resources such as energy, materials, water and land. Economic activity also generates material residuals, which enter the environment as waste or pollution emissions. The Earth, being a finite planet, has a limited capability to keep on supplying indefinitely resources and to absorb increasing pollution.

A fundamental question faced by governments worldwide is how and to what extent different economic activities influence the use of natural resources and the generation of pollution. The International Resource Panel responded to this challenge with its assessment report: "Assessing the environmental impacts of consumption and production: priority products and materials". The focus of this report was to identify key environmental and resource pressures that should be considered in the assessment of products and materials. It takes a global perspective, recognizing regional and local differences.

The assessment was based on a broad review and comparison of existing studies and literature analyzing impacts of production, consumption, or resource use of countries, country groups, or the world as a whole. The report reviews assessments of environmental impacts in order to identify environmental pressures that should be considered when assessing priority products and materials and also reviews work on scarcity of mineral, fossil and biotic resources. The assessment report was well received and since its publication in June 2010, it has been downloaded over half a million times.

KEY MESSAGES OF THE REPORT ENVIRONMENTAL IMPACTS OF CONSUMPTION AND PRODUCTION



A wealth of studies are available that help to assess the most important causes of environmental impacts from a production, consumption and materials perspective. These different studies and different perspectives points, paint a consistent overall picture:

- Agriculture and food consumption are identified as one of the most important drivers of environmental pressures, especially habitat change, climate change, water use and toxic emissions.
- The use of fossil energy for heating, transportation, metal refining and the production of manufactured goods is significantly important, causing the depletion of fossil energy resources, climate change, and a wide range of emissions-related impacts.
- The impacts related to these activities are unlikely to be reduced, but rather enhanced, in a business as usual scenario. This study shows that CO₂ emissions are highly correlated with income. Population and economic growth will hence lead to higher impacts, unless patterns of production and consumption can be changed.
- Furthermore, there are certain interlinkages between problems that may aggravate them in the future. For example, many proposed sustainable technologies for energy supply and mobility rely for a large part on the use of metals (e.g. in batteries, fuel cells and solar cells). Metal refining usually is energy intensive. The production of such novel infrastructure may hence be energy-intensive, and create scarcity of certain materials, issues not yet investigated sufficiently. There is hence a need for analysis to evaluate trends, develop scenarios and identify sometimes complicated trade-offs.

At <http://www.unep.fr/scp/rpanel/productsandmaterials.htm> the full report is available in English, with summaries available in English, French and Spanish and flyers available in all official UN-languages.

B. Forthcoming assessment reports

Within the International Resource Panel, five working groups are currently working on a number of assessment reports that are in different stages of preparation. Appendix III provides a timetable with the expected time of completion of the reports that are in progress. Below, the work of each of these working groups is briefly described.

1. Decoupling

The Working Group on Decoupling focuses on one of the specific objectives of the International Resource Panel, that is: to provide a scientific understanding of decoupling and resource productivity and related policies and technologies. Its first report, after a rigorous peer-review process, is expected to be launched early 2011. The assessment scopes the challenges related to decoupling of the use of natural resources and environmental impacts from economic activity. It offers important sets of data on resource extraction and use and global material flows; it also includes four country case studies from both developed and developing countries (China, Germany, Japan and South Africa). The planned second report on Decoupling will focus on technology opportunities and policy options that will support the uptake of and massive improvement in resource efficiency and eco-efficiency. The case studies will document the successful practices of decoupling societal well-being from resource consumption at national, sectoral or city levels and present policy instruments that have proven to be effective in reducing resource use.

2. Environmental Impacts

After the successful launch of its first report (see above Section II/A/3), the Working Group on Environmental Impacts has started work on its second assessment report that is focusing on low-carbon technologies. This report will aim at providing decision makers with the information needed to better understand potential environmental burden shifting and resource constraints when the full-scale diffusion of low-carbon technologies is brought on the stream. In addition, this Working Group is exploring the importance and feasibility of preparing a report on the translocation of environmental impacts and resource pressure through trade.

3. Sustainable Land Use and Soil Management

This Working Group concentrates on a study of technical, informational and institutional issues related to land use and soil management that are essential to food security, poverty reduction and the sustainable management of resources such as water, forestry and biomass and that are not yet dealt with sufficiently elsewhere. This study will build on the findings and messages of the first report of the International Resource Panel – Assessing Biofuels- and will be undertaken through an extensive and in-depth assessment of exiting literature and documents. A scoping document of this report has been prepared.

4. Further Assessments on Metals

The Working Group on Metals has the ambition to develop a total of six assessment reports. Following the launch of the first report, the second report of the Working Group focuses on the recycling rates of metals and has been peer-reviewed. The results are expected to be published in early 2011. After this, a third assessment on the environmental impacts of metals will be conducted, followed by a fourth report on technologies and opportunities for recycling metals. A fifth report will attempt to look at the demand scenarios of metals. Then, the total of these five reports will culminate in a final report that will assess which metals are most critical, the “top 10” most critical metals for the global economy.

5. Water Efficiency

The Working Group on Water has two reports in progress. Its first report will be a scoping paper that, based on extensive studies on water related issues, is looking at the necessity, cost/benefit of decoupling water use from economic activity and improving water efficiency and water productivity, mostly from a demand side perspective. It will attempt to answer whether water use practices constitute a constraint to environment sustainability, social progress and economic development and, if affirmative, how to remove the constraint technically and institutionally. This first report will also introduce a new methodology on sustainable water management, based on water footprinting and water accounting, paving the way for the second report, which will identify relevant policy issues and will analyze the nexuses between water, energy and other sectors.

6. Cities and Urbanization

Recognizing that more than half of the world population is now living in cities and that cities will have to play a crucial role in successful decoupling, a new Working Group on cities and urbanization will discuss decoupling in an increasingly urbanized world. An assessment report, currently in the scoping phase, will address the historical linkage between global resource flows and urbanization in order to better understand the role cities can play as nodes for sustainability-oriented innovations that could make a significant contribution to a transformative change in the transition to green economy and implementation of sustainable development.

C. Other activities

During these initial consolidating years, the International Resource Panel gave priority to laying down a solid organizational foundation through assembling a number of lead scientists and experts, developing the operational procedures and work plans and building an efficient operational structure. With the publication of the three assessment reports as described above, the visibility of and demand for the Panel service products has been increasing. While continuing to produce high quality and policy relevant assessment reports, the International Resource Panel will considerably strengthen its effort in outreach to policy makers, industry leaders, NGOs and professional societies in capacity-building for developing countries.

1. Capacity Building activities

It has been a practice for the International Resource Panel that a seminar or workshop is arranged back to back with its working meetings. Panel experts present the results and methodology of assessment work and methodology to workshop/seminar that is often attended by high level decision-makers in government, industry and research/education institutions. Those activities also provide an opportunity for Panel

members to listen to and better understand specific needs, particularly in developing countries. The International Resource Panel has received an increasing number of requests from Developing Countries for training and capacity building and will double its efforts to respond to these needs in order to achieve its goals.

2. Outreach and Communication

Awareness and understanding of the importance of responsible and efficient use and production of resources is being increasingly considered as a priority at national, regional and global levels. However, awareness levels are still fairly low. At the same time, the global debate on relevant issues, such as with resource scarcity, climate change, is at high risk of getting distorted by incomplete information or vested interests. To meet this challenge, the International Resource Panel has developed a communication strategy that will guide the production of quality service products and extend its influence and garner a worldwide reputation in front of the target stakeholders who will exert the greatest influence over the use of the world's resources in the coming decades. In this context, the International Resource Panel has been consulting with the High Level Panel on Global Sustainability so as to identify synergies and develop a working relation so as to jointly contribute to the requested paradigm shift through sustainable consumption and production, resource efficiency and green economy.

3. Cooperation with the Global Sustainability Panel

The International Resource Panel has been consulting with the High Level Panel on Global Sustainability established by the UN Secretary General, to identify synergies and ways of cooperation so as to jointly contribute to the development of a new paradigm in sustainable development through sustainable consumption and production, resource efficiency and green economy.

Appendix I – Members of the International Panel for Sustainable Resource Management

Ernst U. von Weizsäcker (co-chair)	International Resource Panel Co-Chair, Former Chairman of the Bundestag Environment Committee
Ashok Khosla (co-chair)	International Resource Panel Co-Chair, President, IUCN, and Founder, Development Alternatives, India
Jacqueline Aloisi de Larderel	Former Assistant Executive Director (2001-2003), United Nations Environment Programme (UNEP) and Director (1987-2003), UNEP Division of Technology, Industry and Economics
Stefan Bringezu	Director, Material Flows & Resource Management, Wuppertal Institute, Germany
Partha Dasgupta	Professor, Cambridge University, UK
Eric Eboh	Executive Director, African Institute for Applied Economics, Nigeria
Marina Fischer-Kowalski	Director, Institute of Social Ecology, Faculty for Interdisciplinary Studies, University of Klagenfurt, Austria
Thomas Graedel	Professor, Industrial Ecology, Yale University, USA
Maarten Hajer	Director, Netherlands Environmental Assessment Agency Professor of Public Policy, University of Amsterdam
Yvan Hardy	Chief Scientist (2003-2007), Natural Resources Canada
Edgar Hertwich	Professor, Energy and Environmental Systems Analysis, Norwegian University of Science and Technology
Lea Kauppi	Secretary General, Finnish Environment Institute, Finland
Jacqueline McGlade	Executive Director, European Environment Agency (EEA)
Jeffrey McNeely	Chief Scientist, The World Conservation Union (IUCN)
Yuichi Moriguchi	Director, Research Center for Material Cycles and Waste Management, National Institute for Environmental Studies, Japan
Khawar Mumtaz	Director, Shirkat Gah Womens Resource Centre
Mohan Munasinghe	Director General, Sustainable Consumption Institute, University of Manchester, UK
Richard Norgaard	Professor, University of California, Berkeley, USA
Kevin Urama	Director, African Technology Policy Studies Network, Kenya
Walter Pengue	Professor, Buenos Aires University, Argentina
Yong Ren	Deputy Director-General, Policy Research Center for Environment and Economy, Ministry for Environmental Protection, China
Maria Rodrigues	President, Brazilian Society for Ecological Economics, Brazil
Patricia Romero Lankao	Deputy Director, Institute for the Study of Society and Environment, National Center for Atmospheric Research (USA), Mexico

Anna Bella Siriban-Manalang

Director, Centre for Lean Systems, De La Salle University, The Philippines

Sangwon Suh

Assistant Professor, Department of Bioproducts and Biosystems Engineering, University of Minnesota, USA

Mark Swilling

Professor, Sustainable Development Planning and Management, University of Stellenbosch, Republic of South Africa

Appendix II – Steering Committee

National Governments

Canada: Natural Resources Canada

Chile: Comisión Nacional del Medio Ambiente

China: The Ministry of Environmental Protection

Egypt: Ministry of State for Environmental Affairs

Finland: Ministry of the Environment

France: Ministry of Ecology, Energy, Sustainable Development and Regional planning

Germany: Federal Ministry for the Environment

Hungary: Ministry of Environment and Water

India: Ministry of Environment and Forests

Indonesia: Ministry of Environment

Italy: Ministry for the Environment, Land and Sea

Japan: Ministry of Environment

Kazakhstan: Ministry of Environmental Protection

Mexico: Ministry of the Environment and Natural Resources

Netherlands: Ministry for Infrastructure and the Environment

Norway: Ministry of the Environment

South Africa: Department of Environment Affairs and Tourism

Switzerland: Federal Office of the Environment

Russian Federation: Ministry of Natural Resources

Tanzania: Ministry of Water and Irrigation

USA: State Department

Intergovernmental Organizations

European Commission: Environment Directorate-General

Organisation for Economic Co-operation and Development (OECD)

Civil Society Organizations

International Council for Science (ICSU)

The World Conservation Union (IUCN)

World Business Council for Sustainable Development (WBCSD)

Appendix III: Forthcoming Assessment Reports

Decoupling	1 st half 2011	2 nd half 2011	1 st half 2012	TBC
Decoupling and Sustainable Resource Management	X			
Scientific Understanding of Technological Opportunities and of Policies of Decoupling		X		
Environmental Impacts				
Benefits, Risks and Tradeoffs of Low Carbon Technologies		X		
The Translocation of Environmental and Resource Pressures through Trade				X
Biofuels/Land/Soil				
Assessing Land and Soil			X	
Metals				
Metals Recycling Rates	X			
Environmental Impacts of Metals	X			
Technologies and Opportunities for Recycling of Metals		X		
Demand Scenarios		X	(X)	
Critical Metals			X	
Water Efficiency				
Decoupling, Water Efficiency and Water Productivity		X		
Water Foot Printing, Water Accounting and Nexuses to Energy & Other Sectors		X		
Cities				
Decoupling and Cities			X	