UNITED NATIONS ENVIRONMENT PROGRAMME

Programme des Nations Unies pour l'environnement Programa de las Naciones Unidas para el Medio Ambiente

Программа Организации Объединенных Наций по окружающей среде برنامج الأمم المتحدة للبيئة

联合国环境规划署

UNEP

International
Resource
Panel

Embargo: 13.30 EDT (17.30 GMT) May 12, 2011

*UNEP Executive Director Achim Steiner and International Resource Panel Co-Chair Ashok Khosla, together with lead authors Mark Swilling and Marina Fischer-Kowalski, will launch the report 12 May 2011 at the 19th annual meetings of the Commission for Sustainable Development, UN Secretariat, New York. Authors are also available for advance interviews. The full report, "**Decoupling natural resource use and environmental impacts from economic growth**," is available for media preview at www.unep.org/resourcepanel/decoupling/Login.asp (username: resourcepanel (lower case); password: decoupling)*

Humanity Can and Must Do More with Less: UNEP

"Decouple" rate of resource consumption from economic growth rate, experts warn

New York, Nairobi – By 2050, humanity could devour an estimated 140 billion tons of minerals, ores, fossil fuels and biomass per year – three times its current appetite – unless the economic growth rate is "decoupled" from the rate of natural resource consumption, warns a new report from the United Nations Environment Programme.

Developed countries citizens consume an average of 16 tons of those four key resources per capita (ranging up to 40 or more tons per person in some developed countries). By comparison, the average person in India today consumes four tons per year.

With the growth of both population and prosperity, especially in developing countries, the prospect of much higher resource consumption levels is “far beyond what is likely sustainable” if realized at all given finite world resources, warns the report by UNEP’s International Resource Panel.

Already the world is running out of cheap and high quality sources of some essential materials such as oil, copper and gold, the supplies of which, in turn, require ever-rising volumes of fossil fuels and freshwater to produce.

Improving the rate of resource productivity (“doing more with less”) faster than the economic growth rate is the notion behind “decoupling,” the panel says. That goal, however, demands an urgent rethink of the links between resource use and economic prosperity, buttressed by a massive investment in technological, financial and social innovation, to at least freeze per capita consumption in wealthy countries and help developing nations follow a more sustainable path.

The trend towards urbanization may help as well, experts note, since cities allow for economies of scale and more efficient service provision. Densely populated places consume fewer resources per capita than sparsely populated ones thanks to economies in such areas as water delivery, housing, waste management and recycling, energy use and transportation, they say.

“Decoupling makes sense on all the economic, social and environmental dials,” says UN Under Secretary-General Achim Steiner, UNEP’s Executive Director.

“People believe environmental ‘bads’ are the price we must pay for economic ‘goods.’ However, we cannot, and need not, continue to act as if this trade-off is inevitable,” he says. “Decoupling is part of a transition to a low carbon, resource efficient Green Economy needed in order to stimulate growth, generate decent kinds of employment and eradicate poverty in a way that keeps humanity's footprint within planetary boundaries.”

“Next year’s Rio+20 meeting represents an opportunity to accelerate and scale-up these 'green shoots' of a Green Economy, which are emerging across the developed and developing world.”

The new report from UNEP’s International Resource Panel, the fourth in a series, was launched in New York at the annual meeting of the UN Commission on Sustainable Development, where sustainable consumption and production are key issues. And it precedes by a year the global UN Conference on Sustainable Development 2012 meeting (or “Rio+20” in Rio de Janeiro 4-6 June 2012) with its two central themes of a Green Economy in the context of sustainable development and poverty eradication, and achieving agreement on an international framework for sustainable development.

While the report doesn't offer detailed policy and technology options – that's for later reports – it says technologies that have helped humanity extract ever-greater quantities of natural resources need to be re-directed to more efficient ways of using them.

Global average annual per capita resource consumption in year 2000 was 8 to 10 tons, about double the rate of 1900. In 2000, the average rate in industrialized countries (home to one-fifth of world population) was roughly twice the global average and four or five times that of the poorest developing countries.

Global (and national) consumption rates per capita are calculated by dividing total world (and national) extractions of minerals, ores, fossil fuels and biomass by world (and national) population figures.

Rapidly expanding international trade, however, obscures responsibility for resource consumption and associated environmental impacts, the authors note.

Over the past century, pollution controls and other measures have reduced the environmental impacts of economic growth. And, thanks to innovations in manufacturing, product design and energy use – aided by the rising number of people living more efficient lifestyles in cities – the global economy has grown faster than resource consumption growth.

Still, those improvements have only been relative. In absolute terms – with population growth, continuing high levels of consumption in the industrialized countries, and increased demand for material goods, particularly in China, India, Brazil and other quickly-emerging economies – total resource use grew eight-fold, from 6 billion tons in 1900 to 49 billion tons in 2000. It is now estimated at up to 59 billion tons.

Decoupling is occurring but "at a rate that is insufficient to meet the needs of an equitable and sustainable society," the report says. Between 1980 and 2002, the resources required per $1,000 (U.S.) of economic output fell from 2.1 to 1.6 tons.

The report details progress in four countries where government policy supports decoupling. Germany and Japan have both demonstrated the possibilities.

* Germany has established goals for energy and resource productivity – aiming to double both by 2020. There are also ambitious 2020 targets for meeting heating, electricity and other energy needs from renewable sources, and the target of a 30 per cent cut in carbon dioxide emissions by that same year.

* Japan is committed to becoming a “Sustainable Society” focused on low carbon, the reduction, reuse and recycling of materials, and harmony with nature. The flow of materials is carefully accounted. Japan’s measures “are probably the most advanced examples (of) increasing resource productivity and minimizing negative environmental impacts in practice,” the report states.

* South Africa’s Constitution requires “ecologically sustainable development and use of natural resources.” Policies explicitly call for “resource and impact decoupling” and greenhouse-gas emission cuts of 30 to 40 per cent by 2050. Progress, though, is undermined by a growing reliance on exports of coal and other minerals. Its carbon intensity is the world’s highest and emissions per person are double the global average.

* China aims to build an “ecological civilization,” with resource and environmental concerns top priorities. It has created decoupling indicators and fixed mandatory targets, including a 20 per cent reduction of energy intensity and has run nationwide energy saving and pollution-reduction programs. A National Action Plan on Climate Change targets a 40 to 45 per cent reduction in carbon dioxide intensity by 2020.

China, in particular, is a global test case, “because it wants to continue its rapid economic growth but use resources more sustainably,” the report says.

“The measures that China introduces to reconcile these objectives will be of crucial significance for every other developing country with similar policy intentions.”

The report emphasizes that cutting the rate of resource consumption and impacts is possible, in theory, if national economic improvement is defined in terms other than physical growth.

“It is time to recognize the limits to the natural resources available to support human development and economic growth,” the authors say.

Decoupling “will require significant changes in government policies, corporate behaviour, and consumption patterns by the public. … Innovation, even radical innovation, will be required.”

The report describes three scenarios whereby developed and developing countries consume resources equitably: ‘convergence by 2050’

Scenario 1: Business as usual in developed countries, convergence by others

Per capita resource consumption in the industrialized countries remains stable, as it has for the past three decades, and the rest of the world continues the current trend to catch up. This path leads to annual total consumption of 140 billion tons of minerals, ores, fossil fuels and biomass, or 16 tons per capita for a population of 9 billion, by 2050. Says the report: this “represents an unsustainable future in terms of both resource use and emissions, probably exceeding all possible measures of available resources and assessments of limits to the capacity to absorb impacts.”

Scenario 2: moderate contraction of consumption in developed countries, convergence by others

Industrialized nations halve average per capita consumption to 8 tons and other countries rise to that level. The result: total world consumption of 70 billion tons in 2050. “This scenario presupposes substantial structural change amounting to a new pattern of industrial production and consumption that would be quite different from the traditional resource-intensive Western industrial model,” the report says.

This scenario results in global consumption of 70 billion tons by 2050 -- about 40% more annual resource extraction than in 2000. Average emissions of carbon dioxide per capita would rise almost 50% to 1.6 tons per capita and global CO_2 emissions would more than double.

Absolute cuts in consumption – well short of the scale required in scenario two – have occurred in just a handful of countries, and in some cases only because they have lowered their per capita consumption rate by importing resources from elsewhere.

Scenario 3: tough contraction of consumption in developed countries, converging with others

Industrialized nations reduce per capita consumption by two thirds and other nations remain at current rates, resulting in a global per capita consumption rate of 6 tons and total world consumption of about 50 billion tons, the same as in year 2000.

This scenario would be so restrictive, and so unappealing to politicians, that it “can hardly be addressed as a possible strategic goal,” the authors admit.

Yet, even such tough measures would maintain global consumption at levels many scientists still consider unsustainable. Average CO_2 per capita emissions would be reduced by roughly 40% to 0.75 tons/capita and global emissions would remain constant at their 2000 level.

“These scenarios challenge our current thinking and assumptions about development,” says the report. “If investments in developing and developed countries are made today that lock humanity into a business-as-usual or moderately improved resource intensive growth path, the risks of running into ecological and supply constraints will worsen."

"This finding has spurred the International Resource Panel to focus future reports on how to improve resource productivity and find viable alternatives for policy makers."

Challenges ahead include:

* Policymakers and the general public aren't yet convinced of the absolute physical limits to the quantity of resources available for human use.

* The wide discrepancies in per person consumption mean different levels of action are required. Poorer nations, likely the first to feel the impacts of resource shortages, must have a chance to improve conditions in the developed world. But if they emulate a profligate style of growth, they not only expose their economies to supply constraints, the planet's resource bank will go far deeper into the red.

* The best and most easily accessible mineral ores and fossil fuels are being exhausted. New sources are generally more remote and of lower quality. Finding and extracting them takes more energy and increases the environmental impact. About three times more material needs to be moved for the same ore extraction as a century ago, with corresponding increases in land disruption, water impacts and energy use.

* Resource extraction increasingly occurs in countries with lower legal and environmental standards, meaning "environmental impacts per unit of extracted material might become more severe."

* As trade expands, it becomes more difficult to assign responsibility for resource consumption, a crucial consideration if each country is required to limit per capita consumption. Should the reduction of mining and its impacts, for example, be the responsibility of the country where the extraction takes place, the one where the ore is processed into a manufactured product, or the one where that product is consumed?

* A "rebound" effect often leads to increased consumption after energy or manufactured goods become more efficient as consumers take advantage of cost savings to buy something else, or use a device more often – for example: putting more kilometres on a fuel-efficient car.

Reasons for optimism:

* According to the report, the certainty that resource shortages will eventually preclude business as usual ensures that any country “ahead of the game” by investing in innovation “will clearly reap the benefits when pressures mount for others to change rapidly.”

* Developing countries, unburdened by existing technologies, can leapfrog to less resource-intensive processes and goods, as much of Africa has, for example, by bypassing hard-wired telephone services and moving directly to wireless.

* The rising cost of many resources creates an economic imperative to use less – although, at the same time, higher prices could allow exploitation of more expensive, environmentally hazardous sources such as oil from the high Arctic.

* Urbanization can reduce a population’s consumption rate since it makes the provision of services more efficient and “concentrate(s) the knowledge, financial, social and institutional resources required for sustainability oriented innovations.” However, the consumption numbers for cities can be artificially low if the urban area depends on energy and resources from the surrounding countryside. In addition, urban dwellers consume more as the economy grows. “This captures the dilemma of cities for sustainability,” the report states. “They drive the global unsustainable use of resources, but they are also where the greatest potential exists for sustainability-oriented innovations.”

* Even today, there is a vast difference in resource use rate across countries, even those with the same GDP per capita. This indicates that it is possible for countries to be much more resource productive and still grow their economies.

Quotable quotes

“We must realize that prosperity and well-being do not depend on consuming ever-greater quantities of resources. Decoupling is not about stopping growth. It’s about doing more with less. Global resource consumption is exploding. It’s not a trend that is in any way sustainable.”

Ernst U. von Weizsäcker, co-chair, UNEP Resource Panel, and Former Chair, Bundestag Environment Committee

* * * * *

“Decoupling impacts and consumption from growth is an extremely important breakthrough – a way of unlocking the logjam brought about by the notion there must be a trade-off between economic development and the environment. Developing countries could change their idea of what development means in a resource-scarce world.

Ashok Khosla, co-chair, UNEP Resource Panel; President, IUCN, and Founder, Development Alternatives, India

"Consumption of resources has exploded since the time of our great-grandparents due in part to efficiencies leading to reductions in resource prices. With food, rare metals, energy and other resources rising significantly in real price terms now, pre-conditions for determined decoupling efforts are stronger than ever before."

* * * * *

Contacts:

Nick Nuttall, UNEP Spokesperson/Head of Media, on Tel: + 254 20 7623084, Mobile: + 254 733 632755 / +41 79 596 57 37, e-mail: nick.nuttall@unep.org

Moira O'Brien-Malone, UNEP Information Officer, Division of Technology, Industry and Economics (DTIE), Paris, + 33-1-4437-7612, Mobile: +33- 6 82 26 93 73 moira.obrien-malone@unep.org

Terry Collins, Tel: +1-416-538-8712; Mobile: +1-416-878-8712, email: TerryCollins@rogers.com

Jim Sniffen, UNEP Programme Officer, New York, Tel: +1-212-963-8094 or 8210 info@nyo.unep.org

About the International Resource Panel

The International Resource Panel for short, was officially launched in November 2007 and is expected to provide the scientific impetus for decoupling economic growth and resource use from environmental degradation. The objectives of the Resource Panel are to:
* Provide independent, coherent and authoritative scientific assessments of policy relevance on the sustainable use of natural resources and in particular their environmental impacts over the full life cycle; and
* Contribute to a better understanding of how to decouple economic growth from environmental degradation.
For more information: www.unep.org/resourcepanel

About UNEP

Created in 1972, UNEP represents the United Nations' environmental conscience. Based in Nairobi, Kenya, its mission is to provide leadership and encourage partnership in

caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations. UNEP's Division of Technology, Industry and Economics - based in Paris - helps governments, local authorities and decision-makers in business and industry to develop and implement policies and practices focusing on sustainable development. The Division leads UNEP's work in the areas of climate change, resource efficiency, harmful substances and hazardous waste.
For more information: www.unep.org

* * * * *

Chart appended

Figure 2.6. The global interrelation between resource use and income (175 countries in the year 2000)