Fossil-fuel use and feeding world cause greatest environmental impacts: UNEP panel

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How the world is fed and fueled will in large part define development in the 21st century as one that is increasingly sustainable or a dead end for billions of people.

A new and hard-hitting report concludes that dramatically reforming, re-thinking and redesigning two sectors—energy and agriculture—could generate significant environmental, social and economic returns.

Current patterns of production and consumption of both fossil fuels and food are draining freshwater supplies; triggering losses of economically-important ecosystems such as forests; intensifying disease and death rates and raising levels of pollution to unsustainable levels.

The report, prepared by the International Panel for Sustainable Resource Management, says decoupling the environmental impacts of these two broad sectors from economic growth, can start at the level of the household.

Sustainability goals can begin through dramatic improvements in household patterns of energy and food use including heating and cooling systems, gadgets and appliances and the way people travel.

Perhaps controversially, it also calls for a significant shift in diets away from animal based proteins towards more vegetable-based foods in order to dramatically reduce pressures on the environment.

Achim Steiner, UN Under-Secretary General and Executive Director of the UN Environment Programme (UNEP), which hosts the Panel, said: "Decoupling growth from environmental degradation is the number one challenge facing governments in a world of rising numbers of people, rising incomes, rising consumption demands and the persistent challenge of poverty alleviation—thus setting priorities would seem prudent and sensible in order to fast track a low carbon, resource efficient Green Economy."

"The Panel have reviewed all the available science and conclude that two broad areas are currently having a disproportionately high impact on people and the planet's life support systems—these are energy in the form of fossil fuels and agriculture, especially the raising of livestock for meat and dairy products," he said.

"Smart market mechanisms, more intelligent fiscal policies and creative policy-making are among the options for internalizing the costs of unsustainable patterns. Some tough choices are signaled in this report, but it may prove even more challenging for everyone if the current paths continue into the coming decades,' added Mr. Steiner.

Ernst von Weizsaecker, co-chair of the Panel, said the report challenged the widely-held view that rising affluence leads automatically to environmental improvements.

"In the case of CO_2, a doubling of wealth leads typically to an increase of environmental pressure by 60 to 80 per cent and in emerging economies this is sometimes even higher. In the case of food, rising affluence is triggering a shift in diets towards meat and diary products—livestock now consumes much of the world's crops and by inference a great deal of freshwater, fertilizers and pesticides linked with that crop production in the first place," he added.

Ashok Khosla, co-chair of the Panel and President of the World Conservation Union (IUCN), said: "Incremental efficiency gains in for example motor cars or home heating systems have provided some improvements but, faced with the scale of the challenge, far more transformational measures need to be taken—currently we are fiddling—or fiddling around the edges—while Rome burns."

"Part of that new and decisive action also relates to the way the world is trying to combat climate change—as the report points out, for many of the developed economies 20-30 percent of a nation's pollution is not taking place on its territory, but happening abroad via imports. Given this fact, perhaps the current way of structuring agreements on emission reduction targets are becoming obsolete," he added.

The report, called Environmental Impacts of Consumption and Production: Priority Products and Materials, is the latest in a series from the 27 high-level experts that constitute the International Panel for Sustainable Resource Management.

Launched today with the European Commission in Brussels on the eve of UN World Environment Day (June 5), the 149-page report provides science-based priorities for world environmental efforts -- ranking products, materials and economic and lifestyle activities according to their environmental and resource impacts.

The Panel, which has drawn on numerous studies including the Millennium Ecosystem Assessment, cites the following pressures on the environment as priorities for action: climate change, habitat change, wasteful use of nitrogen and phosphorus, overexploitation of fisheries, forests and other resources, invasive species, unsafe drinking water and sanitation, solid cooking fuels, lead exposure, urban air pollution and occupational (including kitchen) exposure to particulate matter.

The Panel set out to identify those activities or resources that contribute disproportionately to environmental pressures and impacts, including (i) production and manufacturing processes; (ii) products and consumption categories; and (iii) materials.
It concludes that the priorities for achieving transformational change are:

- Agricultural goods, particularly products from animals, which are fed more than half of all world crops. Agricultural production accounts for 70% of the global freshwater consumption and 38% of the total land use. Food production accounts for 19% of the world's greenhouse gas emissions and 60% of the phosphorus and nitrogen pollution and 30% of toxic pollution in Europe;

- Users of fossil fuels, especially electrical utilities and other energy-intensive industries, residential heating, and transportation. Fossil-fuel production and consumption dominate as the world's leading cause of environmental degradation. Extraction from alternative fossil fuel sources, such as tar sands, poses potentially even heavier environmental consequences."

- Materials, especially plastics, iron, steel, and aluminium, use of which is growing, not least in the unsaturated emerging economies; and the energy requirements for which are rising because of declining grades of ore as they get used up.

The Panel notes that some efficiency gains are possible in terms of reducing the impacts of agriculture. But adds that a 50 per cent growth in population by 2050 will overwhelm or offset these gains.

Therefore says the report, "a substantial reduction of impacts would only be possible with a substantial worldwide diet change, away from animal products."

Environmental impacts of households, facts and figures:

The report also focuses on the link between households and greenhouse gas emissions as one area to be addressed.

In developing and emerging economies, food and housing dominate as causes of household greenhouse gas emissions.

Available national studies, mostly from OECD countries, show following split of total household energy use:

Houses: including the energy embodied in home construction and furniture, the recurring energy use for maintenance, lighting and comfort, and the growing category of electronic and electric products such as computers):

• 35 to 52 percent;
• Mobility: including vehicle manufacture, fuel production, and operations: 15 to 30 percent;
• Food: 10 to 20 percent;
• Recreation: 5 to 10 percent;
• Clothing: 3 to 5 percent.

Overall emissions from air travel are still small compared with other transportation modes, but could rise rapidly with growing prosperity. Since emissions from aviation reach the upper and particularly vulnerable layers of the atmosphere, their negative impacts could be disproportionately high.

One third of the average US household's carbon footprint is due to emissions caused abroad producing goods imported into the US market.

"This report drives home the message that there is no time like the

present for a switch to a resource-efficient economy," said Janez Potočnik, European Commissioner for the Environment. "It will be a titanic task, but one that is essential for our future prosperity and quality of life. In Europe, it will require effective dialogue with our Member States, where many of the most important decisions have to be made, especially in areas such as tax reform. And we will never succeed without the business community on board, where, despite a number of excellent examples of leadership, there are still too many who have yet to understand the urgency of the need for change."

Says Lead Author Edgar Hertwich, director of the Industrial Ecology Programme at the Norwegian University of Science and Technology: "The Report shows that there a steady increase in greenhouse emissions with wealth, both across countries and within countries. Emissions associated with mobility and the consumption of manufactured products increase fastest with increasing wealth, but even for food consumption we do not see any decoupling. Decoupling does not happen by itself, it can only be the result of strong policy action."

Says Angela Cropper, UNEP Deputy Executive Director: "On World Environment Day, we hope people everywhere become more conscious of the world behind the products we buy and the impacts they cause, often on the other side of the world. Our aim is to inform business, policy makers and consumers about environmental impacts of our every day consumption. Having better information is the starting point for efforts to reduce the impacts on biodiversity, climate and pollution in an intelligent, targeted way.

"Sustainable development starts by putting emphasis on those efforts that do the most good in reducing humanity's harm of ecosystems. In that regard, this report is of high relevance for policy-makers and businesses. And for individuals, it reinforces familiar advice: action is needed beyond recycling to installing energy efficient heating and cooling in the

house, shifting to a more sustainable diet, and use public transport where available."

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