



# World Economic and Social Survey 2011

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## Press Release

### UN report calls for major investments in new technologies in developing countries to build green economies

*Need for immediate gains in energy efficiency, agricultural production and disaster reduction*

Geneva, 5 July 2011 – Over the next three to four decades, humankind must bring about a fundamental technological overhaul of production processes worldwide to end poverty and avert the likely catastrophic impacts of climate change and environmental degradation, the United Nations said in a report issued today.

Major investments will be needed worldwide in the development and scaling up of clean energy technologies, sustainable farming and forestry techniques, climate-proofing of infrastructure, and in technologies reducing non-biodegradable waste production, according to *The World Economic and Social Survey 2011: The Great Green Technological Transformation*, published by the UN Department of Economic and Social Affairs (UN-DESA).

The report says the technological overhaul will need to be on the scale of the first industrial revolution. Over the next 40 years, \$1.9 trillion per year will be needed for incremental investments in green technologies. At least one-half, or \$1.1 trillion per year, of the required investments will need to be made in developing countries to meet their rapidly increasing food and energy demands through the application of green technologies.

Since the first industrial revolution, world income and population have grown exponentially, but so have energy demand and the production of waste and pollutants (see figures). As a result, the global environment's capacity to cope with human activity has reached its limits, according to the report. About half of the earth's forests are gone, groundwater resources are being depleted and contaminated, enormous losses in biodiversity have already occurred, and climate change threatens the stability of all ecosystems.

At the same time, about 40 per cent of humanity, or 2.7 billion people, rely on traditional biomass, such as wood, dung and charcoal, for their energy needs. And 20 per cent have no access to electricity, mainly in South Asia and sub-Saharan Africa.

To achieve a decent living standard for people in developing countries, especially the 1.4 billion still living in extreme poverty, and the additional 2 billion people expected worldwide by 2050, much greater economic progress is needed, the report says.

“This report shows how important technological progress will be for ensuring a future that benefits everyone while protecting our planet,” said Sha Zukang, Under-Secretary-General of UN-DESA and Secretary-General of the UN Conference on Sustainable Development, often referred to as Rio+20, to take place in June 2012 in Rio de Janeiro, Brazil. “The report is required reading as we gear up for Rio+20, which is an opportunity to define pathways to a safer, cleaner and more prosperous world for all.”

For the required technological revolution to be successful, the report finds that it must occur within a limited timeframe – sooner rather than later – because of growing ecological pressures. To induce the necessary technological progress and adaptation, the report says, governments both nationally and through intensified international cooperation must play a central role.

“Business as usual is not an option,” said Rob Vos, lead author of the report. “Even if we stop the global engines of growth now, resource depletion and pollution of our natural environment would continue because of existing production methods and consumption habits. Without drastic improvements in and diffusion of green technologies, we will not reverse the ongoing ecological destruction and secure a decent livelihood for all of humankind, now and in the future.”

### **The green energy transformation**

A comprehensive global energy transition is urgently needed to avert a major planetary catastrophe, the report finds. The scaling up of existing green technologies and creation of new technologies are needed to improve energy efficiency. They also require fewer resources and minimize pollution. At present, 90 per cent of energy is generated through brown technologies that use fossil fuels, which are responsible for about 60 per cent of carbon dioxide emissions. Reducing energy use and greenhouse gas emissions, the report says, will require drastic changes in consumption patterns, transportation systems, residential and building infrastructure, and water and sanitation systems.

To accelerate technological transformation to meet emissions and energy-use targets, the report recommends that policies be guided by four key goals: improving energy efficiency without expanding consumption where energy-use levels are high; supporting a broad global energy technology development portfolio while scaling up the use of known green technologies in specific places; supporting greater experimentation and longer discovery times; and applying superior governance and accountability strategies in energy-related technological development than at present.

### **A truly ‘green’ revolution in agriculture**

Modern agriculture contributes about 14 per cent of greenhouse gas emissions, and the management of land-use and water is not sustainable, the report says. These have been the outcomes of the so-called green revolution in agriculture of the 1960s and 1970s, which boosted food production worldwide, but also accelerated land degradation and water pollution. Global food production must increase by 70 to 100 per cent by 2050 to feed a growing population. To meet this challenge, the report calls for a ‘truly green agricultural revolution’, using farming techniques that require less water wastage and less use of chemicals and pesticides that cause land degradation.

The report says these farming technologies exist, but their deployment needs to be scaled up and made affordable to farmers worldwide, but especially to smallholders in developing countries. Economies of scale in sustainable food production will have to be promoted through adequate support services, not only in the form of access to sustainable farming techniques, but also through upgraded distribution networks and transportation, sustainable irrigation and water management systems, and access to credits and land. This will have vast implications for land use and agriculture.

## **Innovation for disaster risk reduction**

The incidence of natural disasters has increased fivefold since the 1970s, the report finds. Drought and floods have become more frequent and intense, and often affected the poorest countries the most. Climate change induced by human activity is to blame in part. Deforestation, degradation of natural coastal protection and poor infrastructure increase the likelihood that weather shocks will turn into human disasters. Reducing disaster risk, the report says, will require significant technological and social change.

Reducing disaster risk will involve changes in the design of settlements and infrastructure. The report says that affordable technological innovation, drawing on local knowledge, is needed to adapt disaster-resilient infrastructure, housing and natural coastal protection to ground conditions. Because natural events do not respect political boundaries, national efforts must be supported by regional and global cooperation.

## **Policy changes needed at all levels**

Most efforts for a technological transformation must occur at the national level and build upon local conditions and resources, the report recognizes. Besides reshaping national development efforts, the report calls for international commitment in the areas of technological development and cooperation, external assistance, investment finance and trade rules.

Businesses and governments tend to see inadequate financing as the greatest obstacle to the more rapid adaptation of clean technologies. Given the limited capacity to mobilize long-term financing domestically in many developing countries, the report says, an important share of additional investment needs must be financed by international resource transfers. The report finds the commitment set out in the Copenhagen Accord to mobilize \$30 billion between 2010 and 2012 and \$100 billion per year by 2020 in transfers to developing countries as a step in the right direction. But, it adds, delivery on these commitments will need to be accelerated and resources scaled up to ensure developing countries meet the challenge.

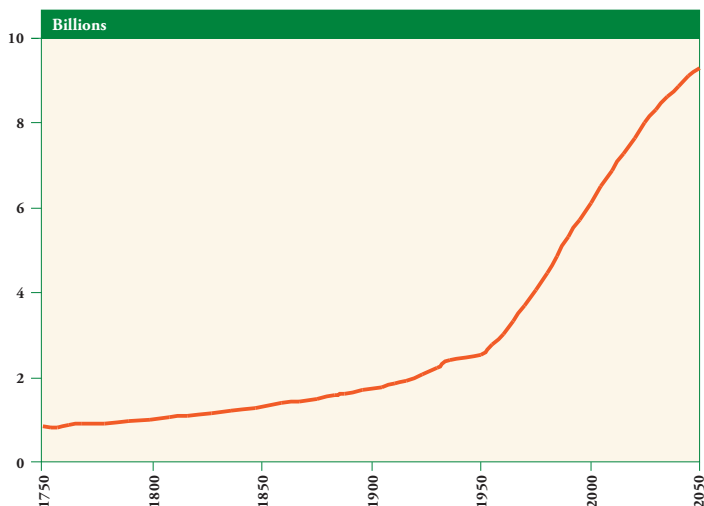
The report further proposes to build a global public technology-sharing regime and networks of international technology research and application centres. To rapidly spread green technology, the report says, more multilateral intellectual property rights modalities must be used than presently allowed under the World Trade Organization.

“The need for a technological revolution is both a development and existential imperative for civilization,” Vos said. “This is why sustainable development is so important now, because it is not only about making improvements for life today, but also for future generations.”

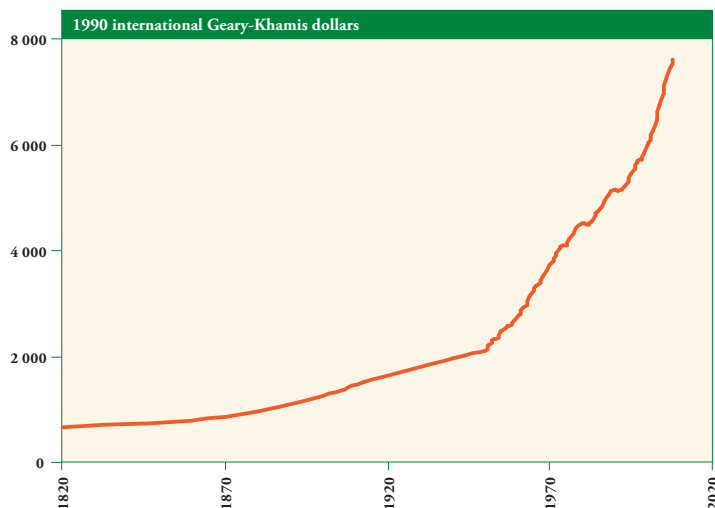
For the full text of the report and more information, see  
<http://www.un.org/en/development/desa/policy/wess/index.shtml>

# The exponential growth of world population, income, energy consumption, and environmental degradation

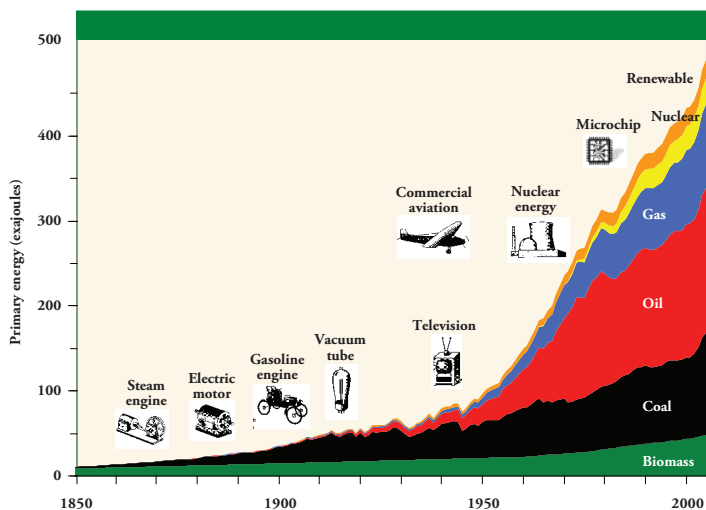
## World population



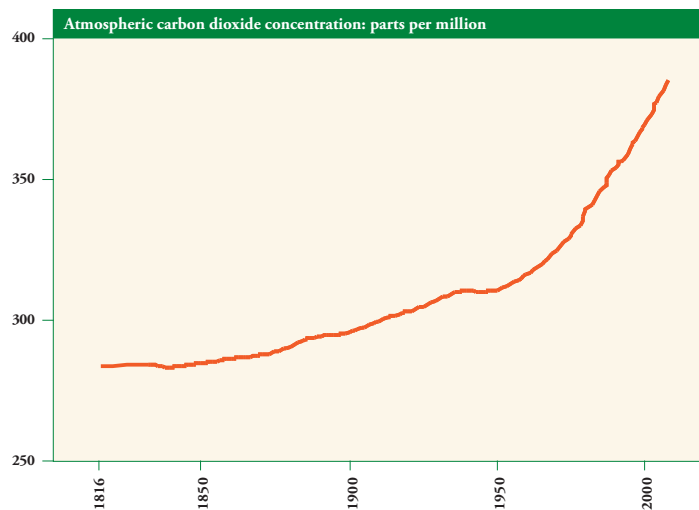
## World income per capita



## World population



## World income per capita



Source: World Economic and Social Survey 2011: The Great Green Technological Transformation (United Nations publication, Sales No. E.11.II.C.1), available from <http://www.un.org/en/development/desa/policy/wess/index.shtml>.

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