How do we use our planet?

The way forward

in this issue >>>

Current consumption patterns

The world's current population is estimated at over seven billion, with over 9.5 billion predicted by 2075 (UNFPA, 2011). Of the seven billion people, one billion or 14% of world's population are severely undernourished, although according to the UN World Food Programme, there is enough **food** produced in the world every year for 12 billion people (The Guardian, 2012). 98% of world's undernourished are in developing countries(UNWFP, 2012) while according to the latest study from the Institution of Mechanical Engineers, in the developed countries there are around four billion metric tonnes of food produced annually, from which 30 to 50% are wasted and never reach our stomachs. **Water** use has been growing at twice the rate of population increase in the last century. In 2006 a person from the US was using on average 575 liters of water every day, while in Mozambique the value was a staggering four liters per person per day. More striking is that Mozambique was not an isolated case: in Uganda, Rwanda, Haiti, Angola, Cambodia and Ethiopia, inhabitants were using as little as 15l/day (UNDP, 2006). **Energy** consumption per capita has constantly increased during the last decades, from 1336 oil equivalent kg in 1970 to 1790 oil equivalent kg in 2009 (WB, 2012). This not only means more greenhouse gases in the atmosphere, air pollution or oil spills inland and off shore but also damaged ecosystems through the exploration of new resources in previously natural regions, such as Siberia or the Arctic Ocean. Energy consumption per capita is another example of the great discrepancies in resource use. Canada recorded 15,138 kWh/capita in 2010 and Kuwait 18,320 kWh/capita, while Ethiopian inhabitants only used 43 kWh/capita or their Eritreean fellows 45 kWh/h (WB, 2012). Concerns also arise from the state of the world's **forests**. It is well know that forests, generally home to rich biodiversity, are important players in climate change mitigation due to their carbon-sinking role as well as to other vital ecosystem services they provide. Nevertheless, between 1990 and 2000 there was a shift from forest land use to other land use of 4.1 million hectares per year and this number increased to 6.4 million hectares per year between 2000 and 2005 (FAO, 2012). Africa and South America were regions where forest loss rate was the highest, with tropical forest being the most affected, although such types of forests host the richest biodiversity in the world.

"With the boom in international trade, EU consumption and production damage ecosystems and human health far beyond Europe's borders"

During the last decade or so, the general opinion has been that increased **resource efficiency** will lead to a decrease in resource use. Nevertheless, while economic growth and resource efficiency have been decoupled in the last 30 years, the absolute value of resources used has still been increasing (Fig.1, right). Globally, the **extraction of natural resources** has constantly increased, from less than 40 billion tones/year in 1980 to more than 60 billion tones/year in 2007 (Fig.1 left) and apart from periods of economic crisis, the consumption rate did not show signs of slowing down, let alone reversal. Following the current trend, the consumption rate is estimated at over 100 billion tones/year by 2030 (SERI, 2009).

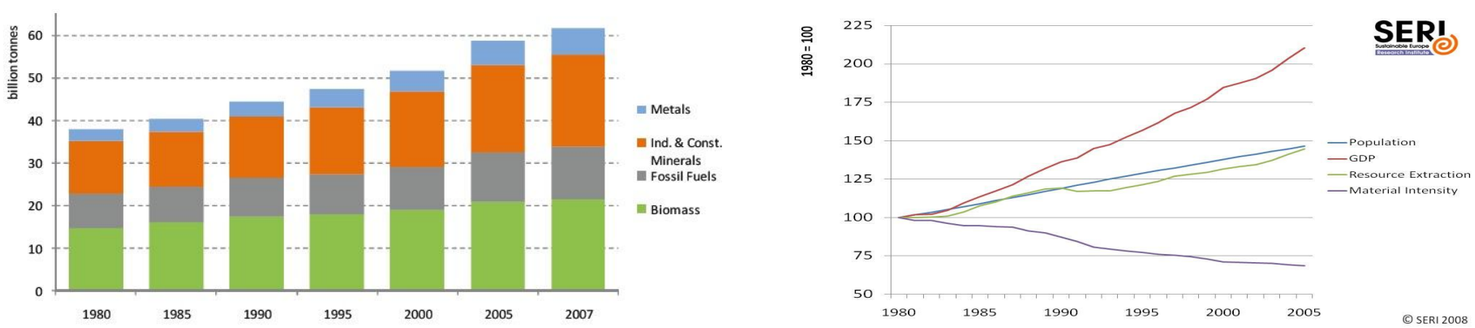

Fig.1 Global extraction of natural resources (left) and GDP-resource efficiency decoupling (right) (FOEE, 2011; SERI, 2006)

Resource use in Europe

'The current consumption and production trends in Europe are far from efficient. Growing customer demand within and outside the EU and the current production techniques mean that 20 to 30% of the resources used in the EU are now imported and this has negative consequences elsewhere in the world' (EEA, 2012)

EU policies have been emphasizing the need for realizing sustainable development and considering **resource efficiency** as a tool to reach this aim. Due to the efforts invested, recent years have seen some tangible improvements in resource efficiency within the EU. **Recycling rates** have gone up from 17% in 1995 to 30% in 2010 and also **waste** volumes have recorded a slight drop (EEA, 2012).

Nevertheless, EU economy is still dependent on **imports** and the volumes of materials used have increased. The average use of materials in 2011 was of 15 tonnes/year for every European of which 3.2 tonnesm were imported. In the same year, the European economy generated five tonnes of waste (out of the 15 tonnes) per person, with each inhabitant throwing half a tone of waste in the household bin, the rest (4.5 tonnes) has been generated throughout the product or service chain (EEA, 2012).

In the **energy** sector, EU relies on imports to an even greater extent. Between 2000 and 2010, EU's gross inland consumption of energy rose on average by 0.2%. (Eurostat, 2012). During the same period, energy imports increased from 47.8% of gross energy consumption to 54.1%. More alarming is the fact that at present, 85.2% of crude oil and 62.4% of natural gas are imported (Eurostat, 2012).

Food is yet another sector where imports have raised dramatically. EU-15 imported 120% more meat, 83% more cereals, 174% more frozen vegetables and 92% more bananas from 1990-2007 (EEA, 2010).

This alarming increase in imports means that Europe does not possess the necessary resources to sustain its current consumption patterns and it is now reaching far beyond its borders to satisfy its increasing demand for resources. It also means that EU's ecological footprint is increasing more and more, damaging ecosystems and human health in other parts of the world. Proof is that in 2010, most of the European ecosystems were degraded and the Europeans were consuming more than twice the EU's land and sea could deliver in terms of natural resources (EU Commission, 2011). Despite tangible efforts in resource use efficiency and an apparent decoupling of economic growth (Fig.1 right), resource use in absolute terms is increasing in the EU as well.

EU Directives and Initiatives >>>

A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy

The flagship initiative for a resource-efficient Europe under the Europe 2020 Strategy supports the shift towards a resource-efficient, low-carbon economy to achieve sustainable growth. It recognises that natural resources underpin EU's economy and the quality of life of European citizens. At the same time, it asks for a change in the current patterns of resource use and identifies increasing resource efficiency as the key to securing growth and jobs for Europe. By doing this, EU hopes to bring major economic opportunities, improved productivity, lower costs, higher competitiveness and harmonisation among different EU policies. As the EU Commission puts it, 'The flagship initiative for a resource-efficient Europe provides a long-term framework for actions in many policy areas, supporting policy agendas for climate change, energy, transport, industry, raw materials, agriculture, fisheries, biodiversity and regional development. This is to increase certainty for investment and innovation and to ensure that all relevant policies factor in resource efficiency in a balanced manner.' (EU Commission, 2012)

The Energy Efficiency Directive, the 2020 Biodiversity Strategy and the Sustainable Development Strategy – one a step forward, the other two a déjà-vu

In line with the key proposals from the Flagship initiative for a resource efficient Europe, the Energy Efficiency Directive 2012/27/EU was adopted on 25 October 2012. According to the Commission, 'This Directive establishes a common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's 2020 20 % headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date. It lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of indicative national energy efficiency targets for 2020' (EU Commission, 2012)
While the EU Directive on energy efficiency is legally binding for each of the Member States, many of the other strategies within the Flagship Initiative are not. It is well known that the previous Biodiversity targets for 2010, EU committed to, were achieved neither in the EU nor in the world (CBD, 2012). In the EU, this was because the European approach was lacking for clear objectives, legally binding instruments, well-defined terms and clear plan for action. The new 2020 Biodiversity Strategy, together with many other strategies within the Flagship Initiative mirror many of these shortcomings, particularly the lack of legal requirements. Automatically, this will reflect at a national level, where most of the Member States will prioritize policies that imply infringements in case of non-compliance. Another example is the Sustainable Development Strategy which has been reviewed on a number of times due to enlargement of the EU (in 2006) or because it did not achieve its targets (in 2009). The overall aim of the Strategy is to achieve a long-term improvement of the quality of life for Europeans through the creation of sustainable communities able to use their resources efficiently and for this there are several objectives in the defined 7 sectors, including sustainable consumption and production. Nevertheless, the Commission has made it clear that EU has only made progress on paper and there are still unsustainable trends in many areas (EU Commission, 2009).

Inspite of all efforts made in resource efficiency and related policies, absolute resource use is still on rise, which makes it clear that enhanced efficiency will not stop the ascending trend of resource use and, consequently, of expanding EU's ecological footprint far beyond its borders. The current consumption behavior of Europeans and the significant increase in imports are alarming signs, which urge the EU to develop different approch for tackle effectively its resource use.

A different approach: CEEweb and the Resource Cap Coalition >>>

Policy efforts addressing resource use only focus on achieving higher efficiency. Nevertheless, this will not solve by itself the present and oncoming scarcity and the accompanying social and environmental problems. Economic growth will relentlessly outstrip efficiency gains, meaning a total rise in resource use. Thereofre, political decisions must deal with the so-called **rebound effect** when they target resource efficiency in order to clamp down on overall resource depletion. The rebound effect can be observed in the case of below cost efficiency increase (when the efficiency increase reduces total costs of production or use). This can include direct rebound effect (when the consumer uses more resources because overall it has become cheaper), indirect rebound effect (when the savings from reduced resource costs are invested in other forms of consumption – also resulting in increased resource use) and macroeconomic rebound due to more rapid economic growth because of the increasing efficiency of the economy. As growing evidence suggests rebound is most significant through indirect and macroeconomic mechanisms on national and global scale (Energy emergence – rebound & backfire as emergent phenomena, A review of literature, J. Jenkins et al, Breakthrough Institute, 2011) – which typically cannot be tackled through the tools suggested in current policies (such as the European Commission's Roadmap to a Resource Efficient Europe).

CEEweb initiated the Resource Cap Coalition (RCC), which brings together European organisations advocating for a global resource use reduction, a precondition for sustainability. This shall be achieved for the aim of halting biodiversity loss and maintaining, as well as recovering ecosystem services, which underpin human wellbeing. But resource use reduction shall be realised hand in hand with poverty reduction and building a green economy. The Policy document of the RCC, and the proposed Energy Quota Scheme (in Spanish) and the Rimini Protocol offer integrated tools for resource use reduction, bringing social, environmental and economic benefits at the same time.

The leaflet is financially supported by the European Commission, but does not necessarily reflect its opinion.

CEEweb for Biodiversity is an umbrella organization of NGOs in the Central and Eastern European region. Our mission is the conservation of biodiversity through the promotion of sustainable development. Further information is on www.ceeweb.org

What are the tools that the Resource Cap Coalition advocates for?

Energy quota scheme

The proposed scheme aims to reduce non-renewable energy consumption at EU level and facilitate the shifting to renewable energy sources and higher efficiency at the same time. The EU and national non-renewable energy use target should be progressively lowered each year, until the EU refits into its ecological share. The proposed regulatory system is based on 3 + 1 pillars.

Pillar 1: The Energy Quota: Energy consumption entitlements of annually decreasing quantities would be allocated among the individual consumers (on an equal per capita basis) and public and private consumer groups. Those, who save a part of their allocated entitlements, can sell their remaining entitlements through a quota manager organization to those, who consume more than their allocated consumption entitlement. The quota manager organization sells the quota in the national currency, and buys the remaining quota in "quota money". International trade among EU MSs is realised based on the same principles.

Pillar 2: Market for Environmental Goods and Services: The market for environmental goods and services is an open market operating according to pre-defined environmental and ethical rules including aspects of sustainability and market considerations. The "quota money" received from selling energy consumption entitlements could be exchanged to certified products and services (e.g. organic food, insulation of buildings for energy saving, renewable energy investments) in this 'eco-labelled' secondary market.

Pillar 3: The Revolving Fund: The Revolving Fund provides the opportunity for everyone, both energy producers and consumers, to achieve savings through energy efficiency and renewable energy investments. The Revolving Fund provides interest free loan in "quota money" with a payback period adjusted to the energy savings or income generation realised through the investment.

Pillar +1: Support Service The Support Service aims to provide advice on lifestyle, planning, social and environmental issues, as well.

Rimini Protocol– An Oil Depletion Protocol The Protocol proposes an oil depletion "adaptation programe", suggesting the limitation of the national rate of extraction and consumption to the global depletion rate (GDR) and the current national (NDR) respectively, depending on whether a particular country is an oil exporter or importer.