The European Union & the World Ecology

The European Union (EU) is the world's largest economic entity. It has many links to the world through trade, investments, the development co-operation programme and tourism. Through Europe's import of a wide range of materials, a very considerable European impact exists on biodiversity worldwide. Europe's ecological impact is second only to North America.

If all people on earth would use the same level of resources as Europeans do, we would need three planets to sustain our needs.

The focus of the map is on the environmental impact on countries outside the European Union and particularly countries in Southeast Asia, Africa, and South America. These countries in particular possess rich and diverse ecosystems often under threat due to the unsustainable production of commodities for the world market.

This map aims to raise awareness of those actors inside the EU that can make a difference in changing unsustainable practices. The map should be viewed as a call for the European Union, its corporations and its citizens to take their responsibility. If one considers Europe's relatively high standard of living, Europe is well placed to reverse the current crisis our global eco-systems are confronted with. This map is produced by the Netherlands Committee for IUCN (NC-IUCN), as part of its programme "The Netherlands and the World Ecology".

NETHERLANDS COMMITTEE FOR
IUCN
THE WORLD CONSERVATION UNION

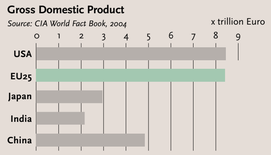
The European Union *in Key Figures*

The European Union is the world's largest trading block, accounting for approximately one fifth of the world's exports and imports. After the enlargement with 10 new EU member states in june 2004, the EU has an internal market of 455 million citizens and contributes over 25% to the world's Gross Domestic Product.

2002	EU25
Population - million (% of world)	455 (7.3%)
GDP - billion Euro (% of world)	9,576 (28%)
GDP per capita, Euro	21.100
Share in world trade in (goods + services)	19,8%

Gross Domestic Product

Source: CIA World Fact Book, 2004



The European Union *and Mining/Energy I*

Mining

The EU is a major importer of mining products. Considerable quantities of a wide variety of metals and minerals are imported to be used in European manufacturing industries.
In general, mining often has considerable negative effects on biodiversity. The damage to the environment may vary between the different types of mining, but all mining leads to serious disturbance of land, air and water ecosystems. Opencast mines have the largest impact on ecosystems, as large areas are cleared to extract mineral deposits, often leaving a desolate landscape behind, devoid of any living resources.
Major mining regions for Europe's import are: South Africa, Brazil, the Andean region and Australia. However, various smaller mines in West Africa, Indonesia and PNG exporting minerals to the EU are also causing considerable damage to biodiversity.

Energy

Although considerable quantities of resources such as natural gas can be found in some of the EU countries, most of its energy has to be imported. Some 80% of the energy consumed by the European Union is derived from fossil fuels (oil, natural gas and coal). About two thirds of these fossil fuels are imported.
The European economy relies on a continuous supply of large amounts of oil. Extraction and transport of oil is frequently accompanied by environmental problems. For example oil extraction in the northern tundra of Russia, which is the largest supplier of oil to the EU, causes considerable damage to the tundra-ecosystem that requires an extremely long time to recover. Oil transport overseas risks oil pollution in coastal ecosystems in the case of shipwreck of oil-tankers.

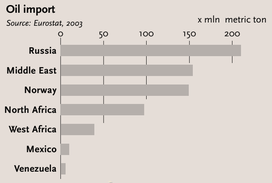
The European Union *and Mining/Energy II*

The Kyoto protocol

An increase of the carbon dioxide level in the atmosphere will have a number of effects. It will probably contribute to global warming, thereby causing a number of yet uncertain consequences for natural ecosystems, agriculture and forestry.
The Kyoto protocol, which most EU countries have signed, aims to limit the emission of carbon dioxide to 1990 levels.
Energy consumption in the EU is relatively high. Several large and energy-intensive industrial complexes, such as chemical and metal industries are present within the EU. Apart from that, intra-European transport is highly developed. As a result, the use of imported energy has increased substantially during the last decades. The overall use of electricity has also expanded considerably. In households, for example, this is caused by the growing use of electrical appliances. Although several EU governments stimulate the use of renewable energy (wind, solar and forms of bio-energy), it accounts in all countries for only a small percentage of electricity produced. More attention to the development of sustainable sources of energy is much needed.

Oil import

Source: Eurostat, 2003



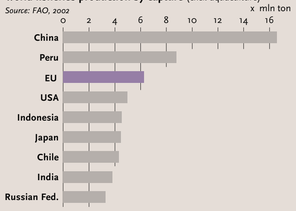
The European Union *and the Marine Environment*

Fish

Several EU countries are important fishing nations. Spain, Denmark, Great Britain and France have the largest fishing fleets of Europe. In 2003 total EU catches amounted to 7.5 million tonnes of fish. Approximately 1.3 million tonnes were produced in fish and shellfish breeding stations (aquacultures). Globally, the EU is the biggest trader in fish and fish products. The EU imported In 2003 more than 3.3 million ton of fish. Over the years, the number of EU vessels (currently over 100.000) has decreased. However, these obsolete fleets have often been replaced by bigger, more powerful and more efficient fishing equipment and boats. Some fleets include large industrial vessels, which are able to stay at sea for weeks and process very large quantities of fish.
Due to over-capacity of the fishing-fleet leading to reduction of EU quotas for several species in recent years, EU vessels have increasingly moved their operations to more distant waters. For example, trawlers from several EU countries are operating along the coast of West Africa. Fishing fleets from countries, like Spain and Portugal are fishing in these waters for cephalopods (squids, cuttlefish and octopus), which are vital to the local African fishing industry.
The EU is currently the largest trader of fish and fish products. Due to the effectiveness of fishing equipment as well as overfishing, many fish stocks have dwindled and marine ecosystems and biodiversity have become increasingly threatened. Marine ecosystems are fragile, and their complexity is not yet fully understood. Furthermore, whenever a fish species is overexploited, the fishing industry will turn to other species (also targeting very slow maturing deep sea species), which then faces the danger of over-exploitation, and so forth. The FAO estimates that 10% of fish stocks or species groups are significantly depleted, nearly 20% are overexploited, and almost 50% have reached their maximum sustainable limits. The larger fish catches as well as the quota systems have led to an enormous growth of by-catches of fish and other sea animals (turtles, dolphins, sharks and unwanted fish species). As these animals are killed in great numbers in the process, an increasing number of fish appear on the IUCN Red List of Threatened Species (www.redlist.org).

World fisheries production by capture (excl. aquaculture)

Source: FAO, 2002



Shrimps

EU imports of tropical shrimps are growing every year. In response to soaring global demand for shrimps, many developing countries have turned to shrimp production. However, both shrimp fisheries as well as aquacultural production of tropical shrimps have a considerable impact on the environment, often leading to severe degradation of marine and terrestrial ecosystems and a loss of biodiversity. Mangroves, which are ecologically important ecosystems, have suffered in particular from shrimp production. There are also substantial social impacts, as habitat degradation has in several countries lead to a loss of livelihoods of coastal communities.

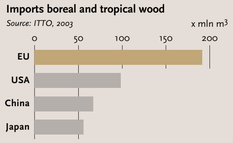
The icons represent the imports of the European Union.
Size is specific to each commodity and relates to the amount in metric tonnes.

The European Union *and Forests*

Half of the planet was once covered with primary forests, but these have been largely lost. The present remainder of primary forests is located in Central Africa, the Amazon Basin, Canada, Southeast Asia, and the Russian Federation. Thirty percent of these remaining primary forests are severely degraded and fragmented.
The logging of timber has led to large-scale degradation of forest ecosystems: forests lose their reproductive capacity; conversion of closed forests to more open forest formations increases the chances of soil erosion and significantly reduces biodiversity and the capacity to absorb carbon. Furthermore, logged forests lose their ability to control flooding and purify water. Apart from the mere extraction of timber, the opening up of primary forest and the accompanying infrastructure stimulates other economic activities as farming. It also leads to large scale hunting of wild animals (bushmeat). The opening up of primary forests has accelerated colonisation in formerly pristine regions.

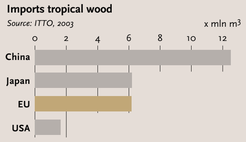
Imports boreal and tropical wood

Source: ITTO, 2003



Imports tropical wood

Source: ITTO, 2003



Tropical rainforests

The EU is an important user of both boreal and tropical timber. In 2003 the EU imported 6 million ton of tropical timber. The five main supplying countries to the European Union are Brazil, Indonesia, Cameroon, Gabon and Malaysia. As a result of overexploitation, several tree species have entered the IUCN Red List of Threatened Species, such as Azobé (*Lophira alata*) and Okoumé (*Aucoumea klaineana*), both listed as vulnerable, while Meranti (*Shorea pauciflora*) is endangered (www.redlist.org).
A major problem is the harvesting, processing, transport, purchase or sale of timber in violation of national laws. Research has shown that tropical timber imports in European countries often include large quantities of illegally logged tropical timber. These imports contravene efforts to protect and conserve forests. Tropical rainforests are home to a wide variety of animals and plants. Due to habitat degradation (caused by logging and conversion) many species become threatened. The opening up of pristine forests by logging roads increases the trade in bushmeat. Many primates in Africa are being hunted to extinction for their meat sold on the local markets.

Boreal forests

Although the majority of boreal wood is produced within EU borders, 18 million tons of boreal wood is imported from Russia, nevertheless. Other major source-areas for boreal wood are: Norway, Eastern Europe, North America and Chile. The timber from these boreal forests is mainly used to produce pulp for the paper industry. The majority of the world's boreal forest is located in Russia and Canada. The northern boreal forest, or taiga, is home to a broad variety of plant- and animal species, amongst them some listed as endangered on the IUCN Red List of Threatened Species like the Amur tiger, red wolf and the Far Eastern leopard.

The European Union & the World Ecology

The European Union *and Agriculture I*

Soy and palm oil

Agriculture is an important economic sector in the EU. The EU is a major exporter and importer of a wide range of agricultural products. The production of these commodities often has a considerable ecological impact within the EU and outside its borders. A good example is the import of palm oil and soy. The intensity of livestock breeding in the European Union requires the imports of large amounts of ingredients for animal fodder. Two important ingredients that are being imported are soybean meal and palm oil meal. Even though soy and oil palm derivatives are also used for other food and non-food products, such as shampoos, detergents or ice cream, the demand is dominated by the agricultural sector.
Soybean meal is mainly imported from Brazil, while the bulk of oil palm products originates from Indonesia and Malaysia. The commercial production of both products places a heavy burden the environment in producing countries. The rapid deforestation rates in Brazil, Indonesia and Malaysia are to a large extent directly or indirectly the result of the large-scale cultivation of soy and oil palm.
Brazil, Malaysia and Indonesia possess a huge wealth of biodiversity, which is under severe threat due to the ever-expanding area of soy and oil palm. Biodiversity-rich areas such as tropical forest or savannah are being converted into large monocultures not resembling the original ecosystem. The damaging effect of this conversion on biodiversity is worsened by the heavy use of fertilisers and pesticides, that cause severe pollution of groundwater.

Production of Crude Palm Oil
(2002/2003, in 1000 tonnes)

Source: CIA World Fact Book, 2004

The European Union *and Agriculture II*

Tea, coffee, bananas, pineapples and citrus

The production of coffee, tea, and tropical fruits increasingly requires additional land. As a result, in many countries natural ecosystems are converted to monocultures of these products. To improve the production of fruit trees, pesticides and herbicides are used. However, these chemicals end up in the food chain where they poison both animals and people. Due to large fluctuations in world market prices of these commodities, the incomes of those dependent on these agricultural products become unpredictable. These monocultures may seem important export earners in the short term, in the long term however, the effects on the economy and ecology could be negative.

The European Union *and Tourism*

Tourism is the one of the three largest economic sectors in the world today, it employs 260 million people and it is predicted that by the year 2020, worldwide 1.6 billion international leisure trips each year. The total tourist arrivals by region shows that by 2020 the top three receiving regions will be recorded per year. The total tourist arrivals by region shows that by 2020 the top three receiving regions will be Europe (717 million tourists), East Asia and the Pacific (397 million) and Americas (282 million), followed by Africa, the Middle East and South Asia.
Tourism development has large impacts on tourism destinations, in terms of income and employment, but also in terms of cultural and environmental effects. There exists a strong relationship between biodiversity and tourism, as nature is an essential element for almost every tourism experience, while at the same time tourism development can seriously degrade natural areas.

The European Union *and Exports of Pesticides and Hazardous Waste*

Several countries in the European Union have large chemical industries and are important producers and exporters of pesticides. Some also export chemical waste. The impact can be substantial, as the rules governing the use of pesticides are less strict in many developing countries than in industrialised countries. Excessive use of pesticides can pose a heavy burden on biodiversity, a threat to human health and cause severe soil and groundwater pollution. The export of hazardous and chemical waste can also be highly detrimental for nature and biodiversity. As many poor countries lack the capability to clean or recycle hazardous waste properly, it is often places in land fills without processing.

The European Union *and Trade in Wildlife and Genetic Material*

Several countries in the EU are active in the trade of live animals. Each year many thousands of tropical birds, reptiles, and fish are imported. Although this trade, as far as threatened or vulnerable species are concerned, is regulated by the Convention on International Trade in Endangered Species (CITES), the situation of many species is not sufficiently known and trade can pose an important threat to fauna and biodiversity in the countries of origin. For example the trade in horticultural products: Although most plants are grown in nurseries, significant numbers are collected in the wild. When uncontrolled, this can have a damaging effect on the survival of the collected species and even threaten to bring some species to extinction.

The European Union *and its Role towards a more Sustainable Future*

Within the EU, there are several actors that could contribute to making production processes more sustainable. These are:

EU Commission and National Governments
- provide a policy framework that is contributing to a sustainable level of production and consumption, including the provision of fiscal and financial incentives
  - provide the framework to help increase the transparency in the chain of production
    - establish binding rules and regulations to protect biodiversity and eco-systems
      - reform agricultural and fisheries policies
        - implement the announced inclusion of the footprint principle in the marine strategy of the EU

Companies
- increase transparency in the entire chain of production
- include environmental sustainability criteria as an integral part of management systems

Financial Institutions
- develop guidelines to refrain from financing projects that harm nature
  - finance research and development on productivity enhancing cultivation methods
    - finance nature restoration projects

Consumers
- demande clear information on how products are produced before purchasing them
- reconsider consumption preferences, in order to attain a more sustainable lifestyle

Civil Society Organisations
- raise awareness on environmental and social issues
- start constructive dialogues with actors on how to contribute to more sustainable production patterns

This map is produced by the Netherlands Committee for IUCN (NC-IUCN), as part of its programme "The Netherlands and the World Ecology". Because many issues relating to the environmental impact of the Dutch economy are also applicable to other EU countries, the decision was taken to produce the current map "The EU and the World Ecology" focussing on the environmental impact of the EU. Detailed information on Europe and the World Ecology will be published in a report and on the *iucn.nl* website.
Over the years NC-IUCN has produced several publications concerning the ecological effects of the Dutch economy:
- *The Netherlands and the World Ecology* (1988, in 1994 substantially revised);
- *Mining and the Mineral Industry in Tropical Regions* (1995), indicating the impact on rainforest and mangrove areas;
- *Mining in Tropical Regions* (1996), concerning Dutch involvement in the mining sector and the environmental effects;
- *The Netherlands and the World Ecology* (1996), a map assessing the amount of land used internationally in connection with the needs of the Dutch economy and the impacts on global ecosystems;
- In 2002 a revised version of the map was published, available in print as well on the NC-IUCN website (www.nciucn.nl);
- the map *The Netherlands, Nature & Tourism* (Nederlanders, Natuur en toerisme), (2003, in English and Dutch);
- *The Netherlands and the World Ecology: Soy and Oilpalm* (2004).
- *The Netherlands and the World Ecology: Fisheries* (2004)
- *The Netherlands and the World Ecology: Tropical Shrimps* (2004)

Copies of this map and the other maps may be ordered at the following address:

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