UNEP

Resource Kit on Sustainable Consumption and Production

ADVERTISING

ECO-DESIGN

ENERGIES

FOOD

HOUSING

LEISURE

LIFESTYLES

MOBILITY

NICT

TEXTILES

TOURISM

WATER

ADVERTISING AND COMMUNICATION

tools to encourage better consumption

Gigantic hoardings, TV commercials, flyers, magazines ... there is no way to escape advertising as it spreads to the four corners of the globe. Advertising creates an illusion of material abundance, starts trends, sows the seeds of new wants and propagates the idea that buying means happiness. This expanding sector generates global revenues equal to one and a half times France's national budget. Some countries invest almost as much in advertising as they do in education. Intermediary between manufacturer and consumer, advertising plays an essential role in keeping the public informed and shaping their decisions. Whereas at one time its sole function was to make people buy more, today advertising must respond to new demands. Those of consumers who are looking for greater significance, transparency and ethics. Those of NGOs and governments that pressure advertisers to inform, alert and encourage responsible behaviour in the face of the issues now threatening our planet. And, finally, the demands of the United Nations Commission on Sustainable Development which, in 1997, engaged the advertising industry to help promote new -and most importantly sustainable- consumption patterns.

IMPACTS

Encouraging excessive consumption

Whether in developed industrialized nations or developing countries, over a quarter of the world's population has adopted a lifestyle that revolves around consumption. With people constantly on the lookout for new products, influenced by advertising and distribution, private consumption expenditures have increased fourfold since 1960. At this rate the planet will soon be unable to go on providing the necessary raw materials to keep pace with such demand for goods and services, or absorb the waste they produce.
www.worldwatch.org/press/news/2004/01/08

SOME COMPANIES HAVE ADOPTED GREENWASHING IN THEIR COMMUNICATION TO MAKE THEMSELVES APPEAR MORE ENVIRONMENTALLY FRIENDLY THAN THEY REALLY ARE. NGOs AND CONSUMER GROUPS HAVE SINGLED OUT THIS TECHNIQUE FOR CRITICISM, OBLIGING FIRMS TO RETHINK THEIR ADVERTISING STRATEGIES IF THEY HOPE TO REMAIN CREDIBLE.

One culture fits all

In developing countries, the arrival en masse of advertising campaigns by multinational firms tends to heighten frustration among the very poor. It also incites local populations to aspire to western lifestyles and abandon local traditions in favour of new consumption patterns.

Visual pollution

From Barcelona to Tokyo or Dakar, the same sight greets people as they enter any city: hundreds of advertising hoardings, sometimes displaying shocking images, disfigure the landscape. Meanwhile, energy-hungry illuminated signs and mobile outdoor advertising are becoming increasingly commonplace.
http://portal.unesco.org/en/ev.php-URL_ID=13067&URL_DO=DO_TOPIC&URL_SECTION=201.html

Wasted paper

Brochures, catalogues and other mailshots are among the tools developed by the advertising industry to reach consumers. They are now so numerous as to pose problems of forest management, ink, paper recycling and waste processing.
www.worldwatch.org/pubs/goodstuff/paper
www.iied.org/smg/pubs/rethink7.html

→ **3/4**
of the world's population owns at least one television set

IN HIS OR HER LIFETIME, A CHILD BORN IN A DEVELOPED COUNTRY WILL CONSUME AS MUCH AS 30 TO 50 CHILDREN FROM A DEVELOPING COUNTRY.

↓Young people are the most influenced by advertising. Hedonist and idealistic, they want it all brand-name clothes and a sustainable planet. They are however increasingly savvy to corporate advertising techniques and know how to decipher their messages.

→ **23 H**
a week: the average amount of time young Americans spend watching TV. Almost the same amount of time they spend in school

REPORTING ON THE ENVIRONMENT

Under pressure from environmental groups and consumer lobbies, companies must now consider their role as members of the wider community and become good citizens. They have developed new tools to inform the public of their social and environmental values. In some countries, led by the Netherlands, Norway, Denmark and France, this is even a legal obligation. When publishing their financial reports, several thousand companies now include information on sustainable development, compared with just a few dozen in 1997.
www.sustainreports.org
www.globalreporting.org

ANTI-ADVERTISERS AND ANTI-CONSUMERISTS ARE BECOMING MORE NUMEROUS AND WINNING MORE SUPPORT.

SOME POLLUTING PRODUCTS ASSOCIATE THEIR NAME WITH IMAGES OF NATURE TO CONVEY A NOTION OF PURITY AND RESPECT FOR THE ENVIRONMENT THAT ONLY EXISTS ON PAPER OR ON THE SCREEN.

↓World advertising expenditure reached $446 billion in 2002, around 9 times more than in 1950.

ON THE RIGHT TRACK

→Advertising and sustainable development: first steps towards rules

The French advertising standards bureau (BVP, Association française des publicitaires pour une publicité responsable) has published its recommendations on how the concept of sustainable development can be used in advertisements. From now on, this theme can no longer be used indiscriminately to promote products or brands. When it is used, advertising messages must respect the principles of truthful, objective and fair communication. This is the first ever example of the advertising industry taking steps to self-regulate how sustainable development is used in communication.
www.uneptie.org/outreach/compact/docs/GC-Dialogue2004-presentations/Jean_Pierre_Teyssier.pdf
www.corpwatch.org/index.php

→ SER and responsible communication

Since the nineteen-nineties, a company's performance is no longer judged in purely economic terms but in view of its social and environmental impact too. The corporate world has grasped this change in attitude and increasingly focuses communication on social and environmental responsibility (SER). The Body Shop, Patagonia and Ben & Jerry's were among the trailblazers, directly informing their customers of the ecological value of their products or on labour conditions, and supporting environmental and development projects. Today, more and more companies are putting sustainable development at the heart of their campaigns.
http://europa.eu.int/comm/employment_social/soc-dial/csr/csr2002_en.pdf

→ Events organizers go green

Events planners are also beginning to incorporate sustainable development into their activities. The international sports world recently joined this movement: in 1999 the International Olympic Committee (IOC) adopted the Olympic movement's Agenda 21, which was drafted by the IOC's Sport and Environment Commission. By approving this declaration, the Olympic Games agree not only to minimize their impact on the environment, but to help improve it and leave behind a positive green legacy. Other organizations have followed suit.
www.olympic.org/uk/organisation/commissions/environment/index_uk.asp

DOES SUSTAINABILITY SELL?

While activities in favour of sustainable development are now acknowledged as being part of a company's overall performance, the corporate world still has doubts as to its repercussions on sales. Some companies have shown there are profits to be made by positioning themselves in this register. Others meanwhile still have cold feet and are slow to promote their exploits in favour of sustainable development or ethical trade. This way they avoid laying themselves open to criticism from NGOs and the media if the rest of their activity doesn't quite reflect these values.

→In 2004, the Palais des Festivals in Cannes hosted ACT Responsible, an exhibition on "how advertising can help change the world" by encouraging responsible behaviour. Proof of growing awareness within the advertising industry of the role it can play in promoting non-consumerist values. **www.adforum.com/specialevents/act4/responsible.asp**

AT UNEP

→ THE ADVERTISING AND COMMUNICATION FORUM ON SUSTAINABILITY

In response to the obstacles and challenges the advertising sector, UNEP set up in 1999 the Advertising and Communication Forum. Its purpose is to raise awareness among advertisers, advertising agencies and the media of sustainable development issues, and to get them thinking about alternative forms of communication that better reflect consumers' changing expectations.
www.uneptie.org/pc/sustain/advertising/advertising.htm

PUTTING IDEAS INTO PRACTICE

Individuals

→ LEARN TO DECIPHER ADVERTISING MESSAGES AND GAUGE THEIR CONTENT → REFUSE UNSOLICITED ADVERTISING IN THE LETTERBOX → LIMIT THE AMOUNT OF TELEVISION WATCHED → LOBBY FOR THE REMOVAL OF ILLEGAL ADVERTISING HOARDINGS → ASK COMPANIES FOR THEIR SUSTAINABLE DEVELOPMENT REPORTS → REPORT MISLEADING ADVERTISEMENTS TO SELF-REGULATION AUTHORITIES

Companies

→ PROVIDE TRANSPARENT INFORMATION ON CONCRETE ACTIVITIES BY THE COMPANY IN FAVOUR OF RESPONSIBLE AND SUSTAINABLE DEVELOPMENT → ENSURE ADVERTISEMENTS RESPECT THE INDUSTRY'S OWN RECOMMENDATIONS → BAN DELIBERATELY MISLEADING ADVERTISING MESSAGES ("GREENWASHING") AND OTHERS THAT ENCOURAGE UNNECESSARY CONSUMPTION → AVOID CREATING ENDLESS SELF-PROCLAIMED LABELS THAT ONLY CONFUSE CONSUMERS → LIMIT USE OF PRINTED ADVERTISING AND KEEP MAILING LISTS UP-TO-DATE → SET UP FOUNDATIONS IN SUPPORT OF ENVIRONMENTAL AND HUMANITARIAN PROJECTS AND DEVELOP SOCIAL MARKETING

Local authorities

→ IMPLEMENT AND PROMOTE ENVIRONMENTALLY AND SOCIALLY RESPONSIBLE PROJECTS → RAISE PUBLIC AWARENESS BY DIFFUSING MESSAGES AND MOBILIZING MUNICIPAL INFORMATION CHANNELS (RECYCLING, FAIR TRADE MARKETS, WORK BY LOCAL VOLUNTEER GROUPS, ETC.) → ENSURE ADVERTISEMENTS IN TOWNS AND CITIES STAY WITHIN THE LIMITS OF DECENCY AND THAT THEIR CONTENT RESPECTS RECOMMENDATIONS BY SELF-REGULATION BODIES → PREVENT ADVERTISING SPRAWL (BILLBOARDS AND ILLUMINATED SIGNS)

HOW TO IMPLEMENT A RESPONSIBLE COMMUNICATION STRATEGY

→ BE CREDIBLE, TRANSPARENT AND HONEST → GIVE SIMPLE, FACTUAL INFORMATION → BE REALISTIC AND DESCRIBE PROBLEMS → ENSURE ENHANCED COLLABORATION BETWEEN MARKETING, COMMUNICATION AND ENVIRONMENT DEPARTMENTS → BRING SUCCESS STORIES TO PEOPLES' ATTENTION WITHOUT BEING AFRAID TO MENTION FAILURES → ENCOURAGE EVERYONE IN THE COMPANY TO GET INVOLVED IN ITS SUSTAINABLE DEVELOPMENT STRATEGY

FIND OUT MORE

The media in the information society, European Commission:
http://europa.eu.int/comm/internal_market/media/index_en.htm
Young people and the media, awareness network:
www.media-awareness.ca
Canadian advertising standards:
www.adstandards.com
International Chamber of Commerce code of environmental advertising:
www.iccwbo.org/home/statements_rules/rules/2001/code_of_environmental_advertising.asp
European Advertising Standards Alliance:
www.easa-alliance.org
Centre for a new American dream:
www.newdream.org
Responsible advertising and children: www.responsible-advertising.org
The global voice for consumers: www.consumersinternational.org

ECO-DESIGN

production without destruction

For several decades, consumer society has made profitability its credo, producing and consuming more and always at the lowest price. This tendency translates into overexploited natural resources, the intensification of air and water pollution, disappearing plant and animal species, and the proliferation of waste. Breaking this chain means taking urgent action to "produce more with less." In other words, to satisfy global demand for goods and services while limiting waste and avoiding excess and pollution. Companies have now adopted this approach and have taken sustainable development onboard in their strategies. It has become a political issue too. In 2000 in Malmö (Sweden), world governments launched an appeal in favour of sustainable production and consumption, "to improve finished products and services while diminishing impacts on the environment and health." In a word, to herald the era of eco-design.

IMPACTS

All consumer goods, even "green" ones, have negative repercussions on the environment. They are manufactured using raw materials, energy and water. Then they must be packaged and transported to their place of use, before finishing up as waste. Eco-design is a means of minimizing these impacts throughout a product's lifecycle for the same degree of efficiency and utility.
www.howproductsimpact.net

SOME OF THE WAYS ECO-DESIGN CAN MINIMIZE IMPACTS

1st stage: raw materials. Manufacturing a product means first exploiting raw materials. Extracting and processing these constituent parts consumes natural resources, uses energy and is a source of pollution.
Solutions: reduce quantities, choose the most appropriate materials, transform waste into raw materials, prefer renewable materials and products that use only one type.

2nd stage: production. Manufacturing tends to consume large amounts of energy because of the complex processes it involves.
Solutions: optimize production processes, assemble products so they are easy to separate into their different components for repair or recycling.

3rd stage: packaging. Bottles, boxes, cans and other packaging currently account for over half the volume of household waste in developed countries.
Solutions: concentrate products, reduce the amount and volume of packaging to make savings along the chain, from manufacturing to waste disposal.

4th stage: transportation. Delocated production, cost-cutting and liberalized markets all add up to one thing: products travel thousands of kilometres before being used.
Solutions: choose manufacturing sites according to the products' final destination, use combined transport and alternative fuels, optimize loads.

5th stage: use. Using products, operating appliances and maintaining them in working order requires more or less energy, water, etc. Usually designed to be frequently replaced, goods today are increasingly fragile and hard to repair, which encourages wastefulness and generates waste.
Solutions: design functional, energy-saving or autonomous products that are lasting, safe and easy to maintain or repair.

6th stage: disposal and recycling. Worn-out or damaged products are more or less easy to recycle. The multiple components, alloys and other combinations of materials from which they are made render disassembling and processing a complex and costly procedure.
Solutions: develop reusable or recyclable products and components.

IN THE SPACE OF A FEW YEARS, GOVERNMENT AND INDUSTRY HAVE REVIEWED THEIR POSITION ON ENVIRONMENTAL ISSUES. FROM AFTER-THE-EVENT DAMAGE REPAIR, RISKS ARE NOW CONSIDERED AT THE EARLIEST STAGE. SUSTAINABLE DEVELOPMENT IS BECOMING AN INTEGRAL PART OF THE COMPANIES' DEVELOPMENT STRATEGY.

→ **560 kg**
of solid waste are produced per capita each year in the industrialized countries: 3 times more than in 1984

ECO-DESIGN

An international concept, developed by the World Business Council for Sustainable Development (WBCSD) at the Rio summit, eco-design is the culmination of a holistic, conscious and proactive approach. It consists in designing a product -or service- so as to minimize its impacts on the environment. Eco-design applies at every stage in a product's life: raw material extraction, production, packaging, distribution, use, recovery, recycling, incineration, etc.
www.wbcsd.ch
www.ecodesign.at/information/einfuehrung/index.en.html
http://europa.eu.int/comm/enterprise/eco_design
www.uneptie.org/pc/sustain/design/design.htm

A PRODUCT'S LIFECYCLE

Life Cycle Assessment (LCA) is an analytical tool that serves to evaluate eco-design concepts. It examines inputs (e.g. materials, resources, energy) and outputs (e.g. emissions to air and water, waste) at every stage in a product's lifecycle to then quantify its environmental impacts. This framework has been standardized within the series ISO 14040.
www.iso-14001.org.uk
www.eiolca.net
www.uneptie.org/pc/pc/tools/lca.htm
www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=33020

↓Over the years, deposit bottles have fallen out of favour to be replaced by disposable packaging. This must then be collected and recycled, which involves the transformation of raw materials. In some countries, led by Germany, deposit bottles are now making a comeback at the majority of points of sale.

ON THE RIGHT TRACK

→ Product service systems

A new marketable mix of products and services is emerging: instead of producing goods to then sell, a company that adheres to the principle of product service systems (PSS) adapts its offer to customers' needs. The result is more tailored solutions, based on the notion of product-sharing. Alongside its traditional activity of selling products, a company might decide to develop a rental business, or to sell services. By fulfilling customers' needs and by optimizing product use, product service systems globally reduce environmental impacts.
www.uneptie.org/pc/sustain/design/pss.htm

→ Zero emission

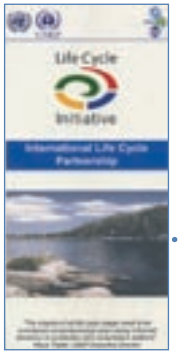
The ZERI Foundation (Zero Emission Research Initiative) is a network of academics, businesspeople and educators. Its purpose is to respond to human needs by reusing existing waste without creating any form of new waste -liquid, gaseous or solid. Projects include farming mushrooms on coffee waste or on spent grains from brewing to make animal feed, and converting a cement factory into Europe's largest composting plant.
www.zeri.org/systems.htm

→ Green materials

New materials are appearing that make use of natural renewable resources. Mainly of plant origin, their composition means they are biodegradable and they can be safely incinerated. For example, plastics made from potato, corn, wheat or rye starch - as an alternative to traditional oil by-products - help avoid the depletion of non-renewable resources and stimulate agriculture by offering new outlets. These materials must however undergo a full quantitative analysis (water, energy, component materials, end-of-life collection, etc.) depending on their usage to guarantee they are indeed more beneficial to the environment.

THE DIFFERENT ECO-DESIGN STRATEGIES

- The product focused approach aims to render existing goods and services more economical, more efficient and less harmful to the environment, as well as improving after-sales service, and end-of-life collection and processing.
- The results focused approach pursues the same objectives from a different angle, for example by selling not the product itself but its use (rental).
- The needs focused approach studies the needs and expectations that a product or service must fulfil, then looks for the best way to satisfy them using a product, or a service, or both.



AT UNEP

→ LIFECYCLE AND INTERNATIONAL PARTNERSHIP

UNEP has set up the Life Cycle Initiative to develop and disseminate practical tools for evaluating the opportunities, risks, and trade-offs associated with products and services over their entire lifecycle. The objective is to found a network of companies that will become a platform for sharing experiences and best practices in this area.
www.uneptie.org/sustain/lcinitiative

BEWARE THE REBOUND EFFECT!

Environmental progress can sometimes trigger a "rebound effect" that defeats the initial objectives. For example, the development of greener industrial processes might result in increased consumption of goods or services. Indeed, the lower cost price, made possible by these improved processes, generates additional disposable income that can be spent on more products and services.

PUTTING IDEAS INTO PRACTICE

Individuals

→ CHOOSE CONCENTRATED OR REFILLABLE PRODUCTS, AND PRODUCTS SOLD WITH ECO-REFILLS OR THAT USE THE LEAST AMOUNT OF PACKAGING, MADE FROM RECYCLABLE MATERIALS → AVOID BUYING SINGLE DOSES → PREFER DURABLE TO DISPOSABLE: THINK REUSE, REPAIR, RECYCLE! → ASK MANUFACTURERS HOW MUCH WATER, ENERGY AND PRODUCTS APPLIANCES NEED TO FUNCTION OR BE SERVICED. ASK TOO ABOUT THE ORIGINS, PROPERTIES AND TYPE OF RAW MATERIALS USED. → BEFORE BUYING A PRODUCT OR AN APPLIANCE, CHECK OUT THE POSSIBILITIES FOR SERVICES OR RENTAL

Companies

→ WHEN DEVELOPING PRODUCTS, USE ECO-DESIGN TOOLS AS FAR UPSTREAM AS POSSIBLE BY FACILITATING CONTACT BETWEEN DESIGNERS AND ENGINEERS OR PRODUCTION MANAGERS → PROVIDE A MAXIMUM OF INFORMATION ABOUT THE PRODUCT AND APPLY FOR CERTIFICATION BY INDEPENDENT BODIES → APPLY FOR ISO 14001 CERTIFICATION → OPTIMIZE WATER AND ENERGY COSTS, BUILDING CONSTRUCTION AND WASTE MANAGEMENT → ASK SUPPLIERS ABOUT THEIR MANUFACTURING METHODS, WHERE THEY SOURCE RAW MATERIALS, ETC → PROPOSE A RANGE OF SERVICES IN ADDITION TO SELLING GOODS AND APPLIANCES → BE INSPIRED BY BEST PRACTICES IN THE SECTOR

Local authorities

→ DEVELOP BIOCLIMATIC ARCHITECTURE (SWIMMING POOLS, SCHOOLS, HOUSING, ETC.) → EVALUATE THE COST OF DIFFERENT PROJECTS OVER THEIR ENTIRE LIFECYCLE → PREFER RECYCLED MATERIALS FOR URBAN FURNITURE AND OPTIMIZE STREET LIGHTING → EXTEND WASTE RECYCLING FACILITIES AND ENCOURAGE PEOPLE TO USE THEM → PROVIDE A COLLECTION SERVICE FOR BULKY ITEMS; MAKE IT EASIER TO RECOVER AND RECYCLE OBJECTS → CHOOSE LESS POLLUTING VEHICLES FOR FLEETS

FIND OUT MORE

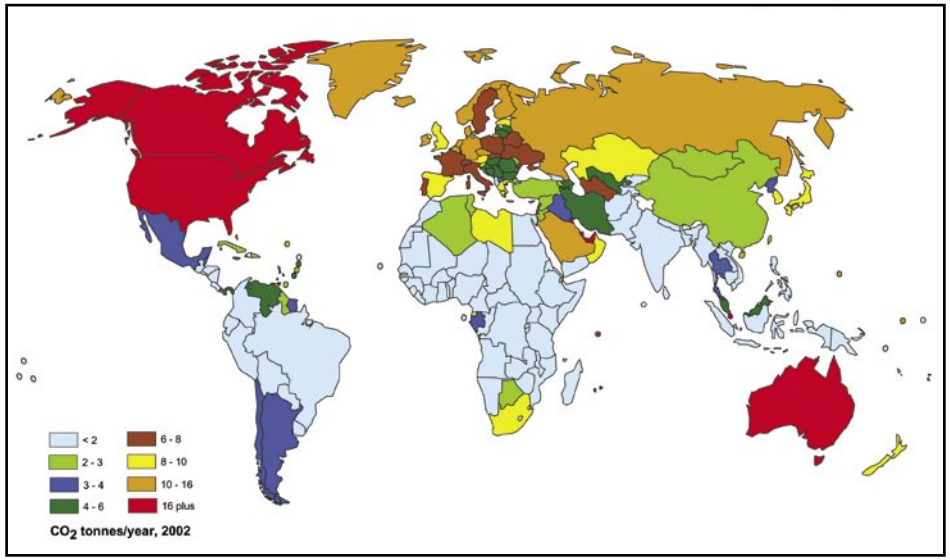
Canada Institute for Scientific and Technical Information, Design for Environment programme: http://dfe-sce.nrc-cnrc.gc.ca/home_e.html
Ecocycle Canada, environmental life-cycle management: www.ec.gc.ca/ecocycle
Information on products and companies: www.responsibleshopper.org
Society of Environmental Toxicology and Chemistry: www.setac.org
Centre for Sustainable Design: www.cfsd.org.uk
TNO, organization for applied scientific research: www.tno.nl/homepage.html
Guide to eco-labels: www.eco-labels.org
Cleaner production gateway: www.cleanerproduction.com
EcoDesign Resource Society: www.vcn.bc.ca/edrs
O2 Sustainable design network: http://o2-usa.org/bayarea/links3.html
Approach of Industrial ecology: www.chairetmetal.com/cm06/erkman-complet.htm
Institute for Engineering Design–Practice: www.ecodesign.at/information/anwendung/index.en.html
The EcoDesign Foundation, Sydney, Australia: www.edf.edu.au
Container recycling Institute : www.container-recycling.org

ENERGIES

savings for the Earth

It's hard to feed oneself, keep warm, get around, build or produce without energy. A source of innovation and progress, energy is one of the keys to development. Energy consumption, which has increased thirteen-fold in a century, reflects the vitality of a country's economy and is one of the most reliable indicators of growth. In developing countries, where work stops at sunset, health, social and economic development are hard to imagine. This is the reality of life for one in three people around the world, because of the uneven distribution of resources. A quarter of the global population consumes three-quarters of the energy produced. Fossil fuels – coal, oil and gas – still account for almost 80% of the energy used worldwide. These finite resources are also responsible for the latest massive oil spills, problems of deforestation and soil erosion and, more importantly, air pollution. On a global scale, fossil fuels generate almost 60% of carbon dioxide emissions, the most widespread of the greenhouse gases. Scientists and ecologists alike have repeatedly sounded the alarm to alert politicical and economic decision-makers to the problem of global warming. Their voice was heard for the first time in 1992 at the Earth Summit in Rio, which was formally acknowledged in 1997 by the Kyoto Protocol to reduce greenhouse gas emissions. Since then, multiple initiatives have been taken to develop new and sustainable energies using the sun, wind, water, biomass or gas. The way ahead.

CO_2 EMISSIONS PER CAPITA FROM THE CONSUMPTION OF FOSSIL FUELS AND THE FLARING OF NATURAL GAS



Source: UN DESA/DSD, US Energy Information Administration

Over 40 years, carbon dioxide (CO_2) emissions from the burning of fossil fuels have more than doubled. Developed countries account for the majority of these emissions. Australia and North America are the world's two biggest consumers of fossil fuels. With almost a quarter of carbon dioxide emissions, the United States release the equivalent of total emissions by the 78 poorest countries (including India and China).

→ **1/4**
of energy in the world is used for transport

→ **442**
active nuclear reactors produce 17% of the world's electricity

→ Intensive crop and vegetable production using modern agricultural techniques requires
6 to 10
times more energy than with sustainable farming methods

ENERGY CONSUMPTION

Each individual consumes an average 1.5 oet (oil equivalent tonnes) per year. There are however substantial differences between world regions.

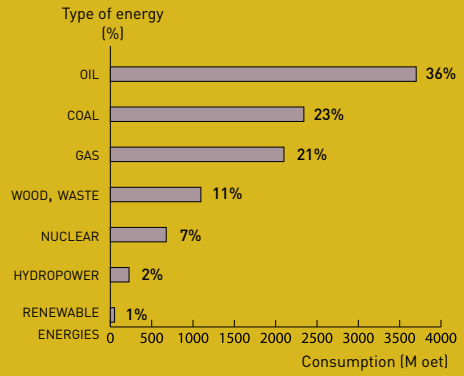
American	8 oet/year
European	4 oet/year
Japanese	3 oet/year
Indian	0.4 oet/year

COAL

Coal was a driving force behind the industrial revolution in developed countries. Today it is the energy behind two-fifths of the world's electricity. While coal continues to provide almost a quarter of the planet's energy, in most countries in the North, its use is becoming less widespread. Especially polluting, coal alone is responsible for half the CO_2 emissions of the electricity sector. For an identical amount of energy produced, it generates 70% more carbon dioxide than natural gas.

www.fao.org/docrep/x5328e/x5328e00.htm
www.cordis.lu/ecsc-coal
www.wci-coal.com/web/bl_content.php?menu_id=0.0

WORLD ENERGY SOURCES



↓ Global warming is evident in the polar regions in the form of retreating glaciers and meltdown (reduction of the ice cap). In 2002 an iceberg covering 3,250 sq. km. –one and a half times the size of Luxembourg- detached itself from the Antarctic peninsula.

AIR-CONDITIONING, WHICH CONSUMES LARGE AMOUNTS OF ENERGY, COOLS INTERIORS BUT WARMS THE ATMOSPHERE AND CONTRIBUTES TO INCREASED LEVELS OF GREENHOUSE GASES.

DIMINISHING RESERVES

Since the two oil crises of 1973 and 1979, governments have woken up to the need to diversify sources of energy. Non-renewable sources (oil, gas, coal and uranium) currently account for virtually 90% of energy consumption. Based on current rates of use and known reserves, the International Energy Agency (IEA) forecasts that the world's oil supply will have completely run out in 40 years, natural gas in 60 years, and coal in 200 years.
www.iea.org

→ **50 %**
the increase in greenhouse gas emissions over a century

ACCORDING TO THE WORLD ENERGY COUNCIL, ENERGY CONSUMPTION MUST MORE THAN DOUBLE BY 2050 TO KEEP PACE WITH THE EXPANDING NEEDS OF THE WORLD'S POPULATION. OVER THE SAME PERIOD, OIL RESERVES WILL HAVE BEEN VIRTUALLY DEPLETED.

↓ Illegal degassing and deballasting operations at sea are the main causes of hydrocarbon marine pollution. The damage they provoke represents several dozen oil slicks per year. Shipwrecked oil tankers are, to a lesser extent, also to blame for the world's polluted waters. The Atlantic Empress set a sorry record when in 1979 she spilled some 280,000 tonnes of crude oil off the Brazilian coastline. More recently, the Erika and the Prestige respectively leaked 20,000 and 30,000 tonnes of oil off the French and Spanish coasts.

IMPACTS

Greenhouse gases and climate change

Human activities have largely contributed to the increase in greenhouse gases (GHG). At a stable concentration, these gases sustain life by regulating the temperature on Earth. Today though, we produce twice as much carbon as the biosphere can recycle. Road transport ranks as one of the most energy-hungry sectors. It burns fossil fuels that release 6 billion tonnes of carbon dioxide (CO_2) into the atmosphere each year. As a result, the temperature on Earth is rising. An unprecedented phenomenon, the temperature of the Earth's surface, which had not varied by more than 4°C in 400,000 years, climbed 0.6°C by 2100. According to the Intergovernmental Panel on Climate Change (IPCC), it could increase by a further 1.4 to 5.6°C by 2100. All over the world, the climate is disrupted, the seasons are out of synch, and natural balance is under threat. Deserts are advancing, glaciers are shrinking, and sea level is rising. The cycles and territories of plants and animals have been altered. Meanwhile the intensity and frequency of extreme weather phenomena –storms, flooding, drought– are increasing.

CARBON DIOXIDE EMISSIONS FROM FOSSIL FUELS HAVE MORE THAN DOUBLED SINCE 1965.

www.greenfacts.org/studies/climate_change/index.htm
www.eia.doe.gov/oiaf/1605/ggccebro/chapter1.html
www.icbe.com/emissions/calculate.asp
www.ec.gc.ca/climate/overview-e.html

↓ Insignificant in size, batteries contain highly toxic heavy metals that infiltrate the food chain and pollute land and water for decades. Manufacturing and recycling batteries necessitates far more energy than they produce when being used.

Air pollution

Because they have no access to modern energy, developing regions often make use of local sources. Wood, coal and dung are used to warm houses and for cooking. Collecting these resources is time-consuming, fastidious and destructive, while burning them is especially dangerous and polluting. The toxic fumes released by combinations of biomass, coal and plastic waste kill over 2 million people each year.
www.who.int/docstore/peh/Vegetation_fires/vegetation_fires.htm

Acid rain

Several tonnes of polluting substances are released into the atmosphere each day. Vehicle exhaust fumes and industry are among the two biggest sources. This chemical cocktail which contains harmful substances –nitrogen oxide (NO_x) and sulphur dioxide (SO_2)– is carried thousands of kilometres by clouds before returning to the four corners of the globe as acid rain. This caused severe damage to European forests in the nineteen-eighties. Despite current attempts to eradicate this phenomenon, in Poland 3 out of 5 trees are believed to have been damaged by the combined impact of acid rain and drought.
www.ec.gc.ca/acidrain
www.policyalmanac.org/environment/archive/acid_rain.shtml

Disrupted landscapes and ecosystems

Dams supply low-cost hydroelectric power. They account for 19% of total world electricity production, and provide vast expanses of water for farmland irrigation. However, such infrastructures can substantially modify the landscape, displacing thousands of people, damaging forests and natural habitats, and impacting the diversity of aquatic species. Insurmountable obstacles for aquatic animals, dams also interfere with fish migration during reproduction, and diminish fishing opportunities downstream. Over recent years, elevator-type devices have been installed at dams to enable fish to freely ascend and descend the waters and reproduce. The Three Gorges dam in China –the biggest in the world– is expected to swallow up 13 towns and 116 rural hamlets and displace 724,000 inhabitants, most of them to new towns.
www.dams.org

ON THE RIGHT TRACK

→ Finance for renewable energy projects

Only renewable sources –solar power, water, wind, biomass and geothermal– can meet the energy needs of the world's population without jeopardizing its natural resources. With backing from the United Nations Development Programme (UNDP), UNEP, and the World Bank, the Global Environment Facility (GEF) supports and funds projects related to these non-polluting energies. In India, the GEF helped finance the production of 41 Mega Watts from wind turbines and 45 MW from small hydroelectric plants. In China, Peru and Ghana, it has contributed to the widespread deployment of solar energy. With each project, the GEF works alongside energy suppliers to help them, through a compensation scheme, make the transition from conventional to renewable energies.

www.gefweb.org
www.agores.org
http://europa.eu.int/comm/energy/res/index_en.htm
www.green-e.org

THE TALLEST WIND TURBINE IN THE WORLD STANDS AT 180 M. IT WAS BUILT IN MARCH 2004 IN EMDEN (GERMANY).

↓ The solar cooker, increasingly in use in developing countries, concentrates the sun's rays to cook food. An economical system, it functions both as an oven and a hotplate.
www.solarcooking.org

→ Active citizens

The vast majority of investment in renewable energies comes from commercial concerns. In Northern Europe, however, some projects are financed by groups of citizens, with Denmark and Germany leading the field for this type of initiative. In 2002 in Denmark, 15% of wind energy consumption was fulfilled by local schemes. Meanwhile, some 340,000 German citizens have put around **e**12 billion into alternative projects. These include a biomass energy investment fund. Entirely devoted to the production of biogas, this fund provides opportunities to make ecological investments.

www.cler.org/predac/wp1
www.renewables2004.de/pdf/tbp/TBP05-financing.pdf

→ Low energy lighting

Low energy light bulbs, also known as energy-saving bulbs, cost a little more to buy but use 80% less electricity than a conventional filament bulb and 25 to 50 times less than a halogen light. They are recommended for rooms where lights stay on for long periods (bedroom, living room, kitchen) and last 6 to 8 times longer than a traditional bulb.

www.homeenergy.org/consumerinfo/lighting

→ Discreetly blending in with roof tiles, solar panels offer numerous advantages. www.ata.org.au/basics/bassolar.htm

→ New fuels

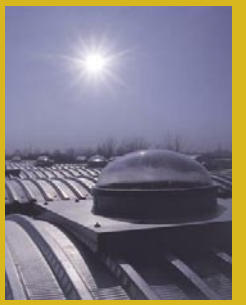
An additional 11,000 cars take to China's roads each day. Worldwide, almost 41 million vehicles rolled off the production lines in 2003: five times more than in 1950. Diesel, petrol and super are still the most widely-used fuels and are largely responsible for atmospheric pollution. Alternatives to traditional energy sources are however being developed around the globe. Biofuels, made from esters, ethanol or plant oils (rapeseed, sunflower, copra, palm, soya, peanut) are finding their first real applications, primarily in the public sector. Furthermore, European automakers have pledged to reduce average CO_2 emissions for new cars to 140 g/km by 2007 (which is 30 g less than today).

www.nps.gov/renew/transportation.htm

OVER A MILLION HOUSEHOLDS WORLDWIDE FUNCTION ON SOLAR ENERGY.

↓ Biomass energy, or the transformation of organic matter into energy, provides farming with new outlets while transforming waste into fuel for the transport sector.

CHANNEL LIGHT



Channelling light from its natural source to then diffuse it inside an old or new building is a simple way to save energy. The system, which comprises a dome on the roof of the building and an "optical funnel" made up of micro-prisms, concentrates light irrespective of the angle of the ray. This light is then channelled along an aluminium-lined pipe, up to 20 m in length. Up to 80% of this light is released via an optical diffuser into any room and at any time of day or night.
www.solarspot.it

PUTTING IDEAS INTO PRACTICE

Industry is not the only polluter. Transport, homes and offices create their share of greenhouse gases too. Air-conditioning, excessive heating and energy-hungry appliances are the main culprits.

Individuals

→ INSULATE BUILDINGS (SEE "HOUSING") → INSTALL EFFICIENT AND APPROPRIATE THERMOSTATS → AVOID SYSTEMATICALLY SWITCHING ON THE AIR-CONDITIONING → WHENEVER POSSIBLE, USE RENEWABLE ENERGIES → SWITCH OFF LIGHTS THAT AREN'T NEEDED → REPLACE FILAMENT AND HALOGEN BULBS WITH ENERGY-SAVING ONES IN THE MAIN ROOMS OF THE HOUSE → DON'T LEAVE APPLIANCES ON STANDBY → FIT CERTAIN APPLIANCES WITH A TIMER → ADAPT LAMPS' WATTAGE TO ACTUAL NEEDS → USE ALTERNATIVE TRANSPORT (SEE "MOBILITY") → CHOOSE ENERGY-SAVING APPLIANCES, KEEP THEM IN GOOD WORKING ORDER AND USE THEM WISELY

Companies

→ OPTIMIZE HEATING AND LIGHTING IN OFFICES → PREFER NATURAL LIGHT, ENERGY-SAVING BULBS AND AUTOMATIC LIGHT SWITCHES → ENCOURAGE STAFF TO FIND WAYS TO REDUCE ENERGY COSTS → SET UP A COMPANY TRANSPORT PLAN FOR STAFF (SEE "MOBILITY")

Local authorities

→ ENCOURAGE BIOCLIMATIC ARCHITECTURE: INSULATION, ENERGY MANAGEMENT (SEE "HOUSING") → OPTIMIZE STREET LIGHTING → OPTIMIZE VEHICLE FLEETS → PROPOSE COLLECTIVE HEATING USING RENEWABLE ENERGIES → GIVE GRANTS TO INDIVIDUAL AND GROUP PROJECTS THAT PROMOTE RENEWABLE ENERGIES → RECYCLE WASTE TO PRODUCE ENERGY

ESTABLISHED IN 1988 BY THE WORLD METEOROLOGICAL ORGANIZATION AND UNEP, THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) IS TASKED WITH ASSESSING SCIENTIFIC, TECHNICAL AND SOCIO-ECONOMIC INFORMATION RELEVANT TO THE RISKS OF CLIMATE CHANGE CAUSED BY HUMAN ACTIVITIES.
WWW.IPCC.CH

CONVENTIONS AND PROTOCOL

After repeated warnings from the scientific community, national governments have gradually grown aware of the serious consequences of climate change. In 1992 in Rio, 153 nations adopted, as a precautionary measure, the Framework Convention on Climate Change. This text marked the first step in an international movement to coordinate actions to "anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects". In 1997 in Kyoto, the signatories, who meet regularly, put forward an application protocol to the convention. The Kyoto Protocol sets out quantitative objectives for the reduction of greenhouses gases by industrialized countries (-8% for the European Union by 2010 versus 1990 emissions). Certain countries have still to ratify the protocol. Were it to come into effect, the Kyoto Protocol would only concern around a third of global greenhouse gas emissions.

http://unfccc.int

→Because plants use photosynthesis to store carbon, forests are regarded as"carbon wells". Oceans also absorb carbon across their entire surface. However, taken together these "wells" absorb just 3 of the 7 gigatonnes of CO_2 that can be directly attributed to human activities.

FIND OUT MORE

European Commission energy-related useful links: http://europa.eu.int/comm/energy/home/link/index_en.htm
Intergovernmental Panel on Climate Change (IPCC): www.ipcc.ch
Climate Action Network Europe: www.climnet.org
UNEP activities in sustainable energy: www.unep.org/themes/energy
UNDP energy for sustainable development: www.undp.org/energy
Map of global warming: www.climatehotmap.org
Mappemonde des impacts du changement climatique: www.climatehotmap.org
European Federation of Regional Energy and Environment Agencies: www.fedarene.org
Association of European local authorities promoting local sustainable energy policy: www.energie-cites.org/index.php/lang/en
European Renewable Energy Council: www.erec-renewables.org
European Renewable Energy Federation: www.eref-europe.org
Canadian Association for Renewable Energies: www.renewables.ca
Energy star: www.energystar.gov
Light up the world foundation: www.lightuptheworld.org
Energy efficiency: www.saveenergy.co.uk

RENEWABLE ENERGIES, LOCAL SOLUTIONS

Environmentally-friendly renewable energies, derived from wind, water, the sun and the earth, create neither atmospheric pollution nor lasting waste. They can even be used as a complement to conventional energy, provided they are chosen rationally according to the characteristics of the region in question.

WIND ENERGY

On the same principle as the windmill, revolving propellers drive a rotor that is connected to a generator which converts mechanical energy to electrical energy. Whether on land (fields, farms, parks, wind farms) or offshore, all winds have the potential to generate energy.

www.ewea.org

HYDROPOWER

This energy is produced by the movement of falling or flowing water which often, before it can be exploited, must be concentrated. This can be achieved by taking advantage of natural waterfalls or by building a dam to obtain a flow of water at sufficient height and rate to install a hydroelectric plant. The water is channelled towards a turbine that drives an electric generator.

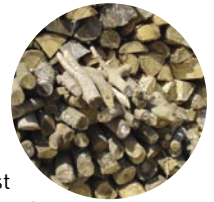
www.wvic.com/hydro-works.htm
http://hydroelectric.com

SOLAR POWER

Solar energy reaches the atmosphere in the form of electromagnetic rays that produce light and heat. Photovoltaic cells convert this energy directly to electricity.

www.ises.org

BIOMASS ENERGY



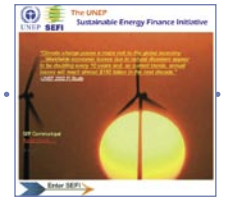
This consists in the transformation of renewable organic matter (plant or animal) into energy. Biomass energy provides agriculture with new outlets and is a means of recycling waste. Various processes exist for producing heat, electricity or fuel, each of which calls upon a different conversion intermediary such as combustion, pyrolysis or gasification.

www.vtt.fi/virtual/afbnet/index.html
www.eere.energy.gov/biomass
http://bioenergy.ornl.gov

GEOTHERMAL ENERGY

This energy is produced by recovering heat from underground sources. Two techniques exist to produce energy. In a low-temperature system, cold water is injected deep underground (between 500 and 1,500 m) and recovered as hot water. A high-temperature system recovers very hot water as it spurts out of volcanic zones and converts it to electricity.

http://geothermal.marin.org/pwrheat.html



AT UNEP

→ SEFI: SUSTAINABLE ENERGY FINANCE INITIATIVE

In 2003, UNEP launched SEFI to encourage financiers to consider investment in sustainable energy projects. This partnership with financial institutions promotes opportunities for joint investments, to reduce costs and financial risks, and to benefit from tools, networks and support.

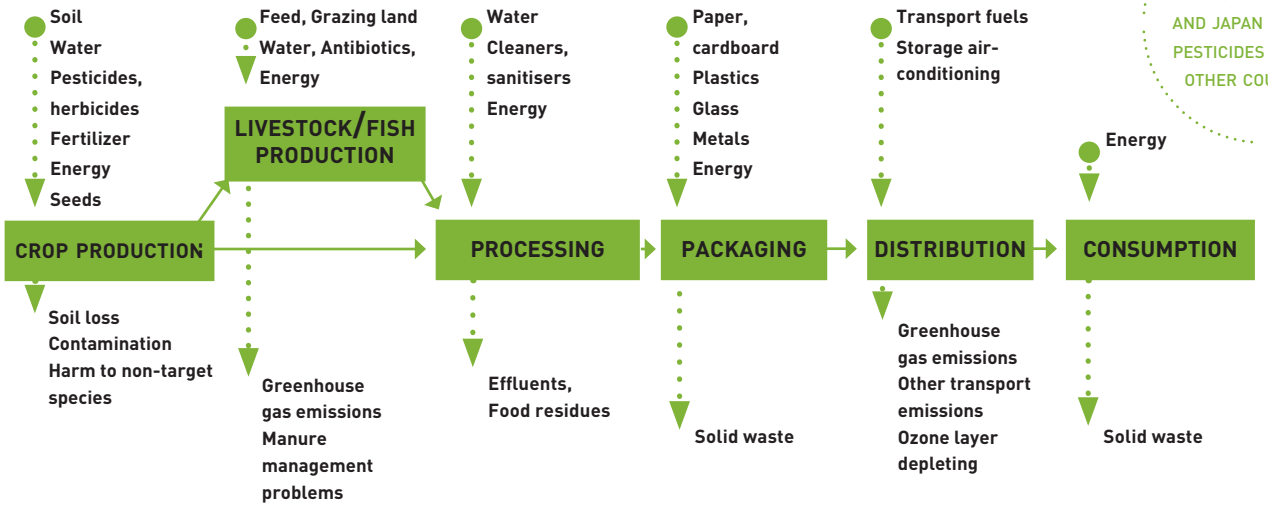
www.sefi.unep.org
www.uneptie.org/energy

FOOD

feed the world without starving the planet

Food has become an issue at the four corners of the globe. Alongside escalating levels of obesity (+200% in the United Kingdom, +70% in the United States, +16% in France), 13% of the world's population are undernourished. Between these two extremes lie increasingly industrialized production, market-led strategies, and developing countries, stricken by famine, whose farmers produce more for export than for their own needs. In 2050 there will be 3 billion more mouths to feed. In accordance with United Nations objectives, the first step will be to halve the number of people who are undernourished. This objective could be reached if resources, already sufficient to feed the world's population, were shared more equally. Faced with such expanding needs, agriculture, livestock production and fishing are turning towards more intensive methods. A consequence of this race for productivity is the overexploitation of natural resources. Science and industry are working all-out to develop new techniques and increase production and yield. Fertilizers, pesticides and genetic manipulation are becoming the everyday tools of a new form of agriculture. The agri-food business, a veritable industry which produces, processes and markets 70% of foodstuffs, has a large share of responsibility for environmental damage. Over recent years though, and parallel to this industrial logic, initiatives are springing up for greener farming and equitable consumption.

FROM FIELD TO FORK: THE IMPACTS OF THE AGRI-FOOD INDUSTRY ON THE ENVIRONMENT



FRANCE, THE UNITED STATES AND JAPAN USE MORE PESTICIDES THAN ANY OTHER COUNTRIES.

Because it calls on increasingly complex processes, the agri-food industry puts substantial pressure on the earth's resources. The use of chemical substances, the development of conservation processes, and the multiple stages involved in processing foods strike a serious blow to the environment.

→ **4 TO 6 KG**

of wild fish are ground into meal to produce 1 kg of farmed fish

→ **12**

crops, mainly wheat, rice, maize and potatoes, feed 80% of the world's population

→ **1.5**

million litres of water are needed to produce 300,000 litres of soda

↓ In industrialized countries, dustbins are almost 3/4 filled with food packaging.

DIFFICULTIES FOR AFRICA'S FARMERS

It is in Africa that farmers must contend with the most difficulties. Here, land is used to grow crops for export which stimulates economic growth, often to the detriment of local populations. Every measure is taken to maintain productivity. However, soil depletion, problems of water supply, the spread of AIDS, and repeated flooding due to climate change have further weakened this economic activity.

GMOs: CAUTION

Research since the nineteen-forties has led to the creation of genetically-modified species that are more resistant to pests and diseases. These include maize, soybeans and tomatoes. Today, genetically-modified organisms (sterile seeds) raise the problem of cross-pollination with wild plants and maybe detrimental to biodiversity.

→ **THE PLANET** loses fertile land each year equal to the size of Ireland

→ **25 TO 35 KG** of cereals are needed to produce 1 kg of red meat

→ **1/4** of food is thrown away without being eaten

IDENTICAL AGRICULTURE

New agricultural technologies, GMOs and global trade in seeds are tending to take the place of local farming traditions. In Mexico for example, the Mayas used to grow maize with beans as a way of controlling parasites and optimizing yield. Now the United States are exporting their production methods and reducing centuries-old practices that are both natural and cultural.

IMPORTED BY PLANE, A STRAWBERRY BOUGHT IN EUROPE IN MARCH CONSUMES 24 TIMES MORE ENERGY THAN A LOCALLY-GROWN STRAWBERRY BOUGHT IN JUNE.

THE OTHER FACE OF GLOBALISATION

Madagascar might be the world's biggest producer of vanilla and one of the leading exporters of shrimps, cloves and coffee, it is still one of the poorest African countries: its farmers produce primarily for export.

IMPACTS

Shrinking biodiversity

According to Birdlife International, 1 in 8 of the world's bird species is threatened with extinction as a result of uncontrolled agricultural expansion and deforestation. The increase in farmland to the detriment of grassland, forests and hedgerows has drastically reduced biodiversity. At the same time, the increased uniformity of products is eroding genetic resources: according to the Food and Agriculture Organization of the United Nations (FAO), out of some 6,300 breeds of domestic animals, 1,350 currently face extinction and 2 domestic breeds are lost every week.

www.fao.org/biodiversity/index.asp?lang=en
www1.oecd.org/agr/biodiversity/index.htm
www.biodiv.org/programmes/areas/agro
www.ers.usda.gov/publications/agoutlook/dec1996/ao236e.pdf
www.unep-wcmc.org
www.agr.gc.ca/policy/environment/biodiv_e.phtml

Less and less fertile land

Soil degradation causes a substantial reduction in the land's production capacity. Mismanaged or overexploited, almost 40% of farmland is now in a state of reduced fertility. As a result, 5 to 6 million hectares of cropland are abandoned in the world each year. Overproduction, inadequate land and water management, deforestation, desertification, the absence of crop rotation, excessive recourse to fertilizers and other chemical products, as well as the use of unsuitable agricultural machinery are some of the main causes behind this decline in quality.

www.ecaf.org
www.fao.org/docrep/W2598E/w2598e06.htm
www.gov.on.ca/OMAFRA/english/engineer/facts/87-040.htm
www.ars.usda.gov/research/programs/programs.htm?np_code=202&docid=847

WHETHER FOR THE PROCESSING, TRANSPORTATION OR DISTRIBUTION OF FOODS, THE AGRI-FOOD BUSINESS CONSUMES UP TO 15% OF ALL THE ENERGY PRODUCED IN INDUSTRIALIZED COUNTRIES.

Contaminated water

Agriculture is the biggest consumer of water in the world: it uses three-quarters of resources. In the race to produce more, chemical products have become the norm. Between 1972 and 1988, fertilizer use grew by an annual average of 3.5% in the world. Each year, over 4 million tonnes of chemical products find their way into nature. While some countries regulate their application, elsewhere fertilizer and pesticide use continues uncontrolled. In 1995, 16,500 tonnes of undesirable or banned pesticides were inventoried in 49 African and Middle Eastern countries. They can be traced in soil, neighbouring crops and, most of the time, in groundwater and bodies of water. One example of their impact: a concentration of nitrates leads to eutrophication (the proliferation of algae which asphyxiate aquatic species), a problem that also concerns countries in the North such as France, the Netherlands and the United States.

www.fao.org/docrep/003/t00800e/t0800e0a.htm
www.un.org/documents/ecosoc/cn17/2000/ecn172000-7add3.htm

Poisoned food

Pollution from agricultural activity and the use of various pesticides have repercussions on health, including acute intoxications and chronic effects, cancers and diseases caused by the transmission of pathogenic agents in manure through water. The food we eat can also be a danger to human health, in particular if it contains certain quantities of heavy metals or others that are harmful to the body, such as lead. Vegetables are most likely to contain record concentrations of chemical products (for example nitrates).

www.epa.gov/superfund/programs/lead/health.htm
www.who.int/ipcs/en
http://vm.cfsan.fda.gov/~lrd/pestadd.html
www.hc-sc.gc.ca/food-aliment/e_index.html

↓Agriculture, fishing and livestock production represent a colossal market in economic terms and in terms of employment.

ON THE RIGHT TRACK

All around the world, alternatives to industrial agriculture are springing up: organic farming, international conventions, local structures that bring together the rural and the urban worlds, and the revival of ancestral techniques are among the most noteworthy initiatives in this field.

↓ To avoid spreading pesticides and insecticides, integrated biological pest control introduces animal or plant species to prevent invasions of parasites. Ladybirds eat cochineals, hedgehogs make a meal of caterpillars, slugs and mice, and nasturtiums attract greenfly away from other plants.

→ The Rotterdam Convention

UNEP and the FAO have joined forces to curb the use of agro-chemicals. This cooperation led to the adoption, in 1998, of the Rotterdam Convention on trade in these hazardous substances, which can have a very serious impact on health and the environment. Henceforth, any country that imports these chemical products must give its prior informed consent before they can cross its borders. The purpose of the convention, which currently covers 27 pesticides, is to protect countries that lack the knowledge and equipment required to safely manage these substances.

www.fao.org/ag/magazine/0205sp2.htm

→ Organic farming

Organic farming is a means of production that respects ecological balance and farmers' autonomy. Its distinguishing features are the absence of synthetic chemical products, recycling of organic substances, crop rotation, and biological control of pests and diseases. Livestock production, extensive rather than intensive, makes use of alternative veterinary treatments and respects animal welfare. Today, organic farming has been adopted in a hundred or so countries and covers almost 24 million hectares. The top three countries with the most organic farmland are Australia, with 10 million hectares, followed by Argentina (3 million) and Italy (1.2 million).

www.ofrf.org/research/index.html
http://europa.eu.int/comm/agriculture/qual/organic/index_en.htm
www.gks.com/library/transition.html
www.epa.gov/agriculture/torg.html

↓ Belle des Brunetières, Markichta Gehesia, Noir de Tartarie for cherries; Esperanza, Frida and Haida for raspberries: these are just some of the heritage of fruit varieties. Few are well-known and even fewer find their way to market. And yet their diversity and rusticity mean they adapt to different physical and climatic conditions, and are resistant to disease.

→ Community-supported agriculture

Consumer groups, agricultural organizations, environmental groups and elected representatives work hand-in-hand to promote quality products and the development of environmentally-friendly agriculture. These structures encourage measured, and nine times out of ten, organic production that involves a wide variety of species. Such schemes often include projects to assist persons in difficulty and bring them back into the community. One noteworthy initiative invites consumers to place advance orders for produce; thanks to this system, farmers no longer produce surplus to requirements.

www.nal.usda.gov/afsic/csa
www.biodynamics.com/csa.html

THE DIFFERENT TYPES OF AGRICULTURE

Farming takes on different forms around the world, and each method brings its own results and specificities. For example, intensive agriculture gives high yields and consumes large amounts of fertilizer and pesticide; organic farming prohibits chemical products; biodynamic agriculture works with the energies of life-forces, while hydrophonic farming replaces soil with water as a growing medium.
www.geog.ouc.bc.ca/conted/onlinecourses/geog_210/210_4_11.html

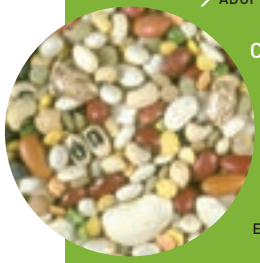
QUALITY LABELS

The majority of countries have developed their own labels as a guarantee of quality in the food sector. Standards, specifications and declarations are a means of evaluating their worth.

PUTTING IDEAS INTO PRACTICE

Individuals

→ PREFER SHORTER DISTRIBUTION CIRCUITS AND LOCAL TRADERS TO SUPERMARKETS → SUPPORT FAIR TRADE INITIATIVES → BUY PRODUCE IN SEASON → CHOOSE PRODUCTS WITH THE LEAST PACKAGING → BUY NO MORE THAN NEEDED → STUDY LABELS AND CHECK THE PRODUCT'S ORIGIN → ASK THE SHOPKEEPER FOR FURTHER INFORMATION → ADOPT A HEALTHY, BALANCED DIET



Companies in the sector

→ EXAMINE PRODUCTS' LIFECYCLE (SEE "ECO-DESIGN") → FOR EACH STAGE, DEVELOP A CODE OF GOOD CONDUCT TO REDUCE CONSUMPTION OF WATER, ENERGY AND CHEMICALS, AND TO CUT DOWN ON TRANSPORT AND PACKAGING → PUBLISH ENVIRONMENTAL REPORTS TO PUBLICLY COMMIT TO AND REPORT ON IMPROVEMENTS IN ENVIRONMENTAL PERFORMANCE

Local authorities and/or companies

→ PROPOSE MORE ORGANIC FOOD IN CANTEENS AND COMMUNAL RESTAURANTS → PROVIDE INFORMATION ON PRODUCTS' ORIGINS → OPEN ALLOTMENTS → DEVELOP ACTIVITIES THAT WILL GIVE CHILDREN INSIGHT INTO FARMING, FISHING AND LIVESTOCK PRODUCTION → MAKE SPACE FOR VEGETABLE PATCHES IN PARKS AND GARDENS → HELP FARMERS DIVERSIFY THEIR ACTIVITIES (BED & BREAKFAST, FARM HOLIDAYS) → INFORM ON THE NUTRITIONAL QUALITIES OF MENUS

FAIR TRADE

The story of fair trade began in the nineteen-sixties in the United Kingdom and the Netherlands under the impetus of non-governmental organizations. Now having spread to all western countries, this equitable system is not motivated by maximum profit but by respect for human rights, for the environment and the quality of its products. Prices are set that will enable producers and cooperatives to better provide for their fundamental needs (healthcare, education and housing) and to invest in their community's future. Fair trade cuts out the intermediary. In return, the producer is committed to supplying a quality product, respecting International Labour Organization standards, and investing part of proceeds from sales in development projects. Fair trade has the vocation to become an alternative to traditional international trade and re-establish the balance between North and South.

www.eftafairtrade.org
www.fairtrade.net

FIND OUT MORE

Food and Agriculture Organization of the United Nations, Agriculture Department:
www.fao.org/ag

New agriculturist:
www.new-agri.co.uk

International agricultural center:
www.iac.wur.nl
International Food Policy Research Institute:
www.ifpri.org

Livestock, Environment and Development (LEAD) Initiative:
www.virtualcentre.org/en/main.asp
Agriculture and Agri-Food Canada:
www.agr.gc.ca

The FAO and organic farming:
www.fao.org/organicag
Aquastat, FAO's information system of water and agriculture:
www.fao.org/ag/agl/aglw/aquastat/main/index.stm

Network on rural development and food security: www.rdfs.net
Sustainable agriculture research and education:
www.sare.org/index.htm
Global Crop Diversity Trust: www.startwithaseed.org
Alliance for better food and farming: www.sustainweb.org
New agriculturist: www.new-agri.co.uk

→ The *waru-waru* system

In the Puno district of southern Peru (between 3,800 and 5,000 m above sea level), prone to frequent drought, flooding and frosts, development workers and farmers have revived a 3,000-year-old indigenous farming system. Abandoned in Incan times it was rediscovered by archaeologists. The system, known as *waru-waru*, uses raised platforms of soil separated by ditches to collect and conserve water, extract salt, and create a warm and beneficial microclimate for the crops. To date farmers have converted over 7,000 hectares to *waru-waru* to grow potatoes, quinoa and barley. Their per-hectare potato yields range up to 10 tonnes, and per capita incomes have more than doubled. *Waru-waru* is an example of what the FAO calls Globally-important Ingenious Agricultural Heritage Systems (GIAHS), which "*build on natural ecological processes rather than struggling against them*". Now, in conjunction with different partners, the FAO aims to promote international recognition, conservation and sustainable management of GIAHS.

www.fao.org/ag/magazine/0211sp1.htm
www.fao.org/ag/agl/agll/giahs/projsum-e.stm

→ In favour of sustainable farming

The leading names in the agri-food industry, among them Danone, Nestlé, Unilever, Findus, Kraft and McDonald's, have created a platform to support and promote worldwide the development of sustainable agriculture, in collaboration with the different stakeholders of the food chain. The Geneva-based Sustainable Agriculture Initiative Platform (SAI Platform) defines sustainable agriculture as *"a productive, competitive and efficient way to produce agricultural products, while at the same time protecting and improving the natural environment and social/economic conditions of local communities."*

www.saiplatform.org

→ Codex Alimentarius

The Codex Alimentarius Commission is a bipartite organization of the FAO and the World Health Orgization (WHO) whose vocation is to satisfy the food requirements of the world's population. Its objective is to protect the health of consumers and to promote fair practices in the international food trade. The commission refers to scientific evaluations to define standards for the security and quality of food products. These standards concern aspects of food hygiene, nutrition and labelling as much as questions of quality. Codex brings together 169 member states.

www.codexalimentarius.net

AT UNEP

→ A SUSTAINABLE DEVELOPMENT WEBSITE

UNEP has set up a website about the problems and key issues related to the agri-food industry. Platform for discussion, training and sharing of experience, its aim is to help companies and organizations implement sustainable agricultural programmes that reflect the principles set out in Rio.

www.agrifood-forum.net

HOUSING

a roof for the world

For some, home is a sheet of corrugated iron on top of old breezeblocks; for others, it is the 25th floor of a modern tower. Housing takes on very different forms around the world, from a simple hut to a luxury second home. This sector uses 40% of the planet's total resources -materials and energy– for the construction and functioning of buildings. It also produces 40% of carbon dioxide emissions. And yet each individual must have access to decent housing and sanitation ... a context in which priorities differ. The overriding concern in developing countries is to suitably house the population. In developed countries, the emphasis is on ecological constructions that favour efficient, organic and local materials, employ environmentally friendly techniques, and take factors such as energy consumption, impact on the landscape and the cultural context into account. Two approaches that could meet in the years to come.

IMPACTS

Polluting materials

Concrete, a basic building material used for two-thirds of housing, is especially polluting. Once mined, the combination of limestone and clay must be fired at over 1,500°C then ground. Both these operations necessitate large amounts of energy: it takes 100 kg of coal to produce one tonne of clinker (concrete before grinding). While most of the time these operations use fossil fuels, they are increasingly being replaced by substitute fuels such as scrap tyres, recycled motor oils and animal flour.

www.tpsgc.gc.ca/rps/aes/content/ercr_handbook_appenda3-e.html

→It takes between 100 and 300 tonnes of gravel and sand to build a house.

3/4
OF A HOUSEHOLD'S TOTAL ENERGY CONSUMPTION GOES TOWARDS HEATING WATER AND ROOMS. GOOD INSULATION –ROOF, WALLS, DOORS AND WINDOWS– MAKES FOR SUBSTANTIAL SAVINGS.

Short-term constructions

Some forty years ago, many countries in the North were obliged to implement vast building projects in order to house their populations. Inexpensive materials along with minimalist construction plans and procedures were favoured as a way of meeting escalating demand. Poorly laid-out, with inadequate thermal and sound insulation and built to last some thirty years, these constructions must now be replaced. The same phenomenon is reaching developing countries, where populations are expanding at a spectacular rate.

www.epa.gov/epaoswer/hazwaste/sqg/c&d-rpt.pdf

Polluted indoor air

The average individual spends more than 80% of their time indoors. Lead, asbestos, volatile organic compounds (VOCs) in paint, pipes and insulating materials are responsible for numerous illnesses. Lead poisoning, cancers and respiratory allergies are among the most common.

www.who.int/indoorair
www.teriin.org/indoor/indoor.htm
www.epa.gov/iaq
www.nsc.org/ehc/indoor/iaq.htm
http://pubs.wri.org/pubs_content_text.cfm?ContentID=1182

THE CONSTRUCTION SECTOR IS CONSIDERED TO BE THE BIGGEST INDUSTRIAL EMPLOYER IN THE WORLD.

→ 1.7 t

of iron ore and 450 to 650 kg of coke are needed to produce 1 t of cast steel

→ 25 TO 60%

of energy and 50% of water could be saved by respecting environmental quality standards for constructions

HOUSING PEOPLE

Between now and 2025 the population is expected to grow by a third. The consequence will be an additional 2 billion people in need of shelter, workplaces and infrastructure. Building and maintaining these constructions will generate consumption of materials, but also water and energy. Furthermore, home ownership is tending towards ever more spacious individual houses, alongside a rise in the number of over-equipped second homes.

↓Impermeable surfaces surrounding houses –frames, car parks, patios and roads– prevent rainwater from penetrating the ground. The result is increased incidences of flooding and runoff alongside depleted groundwater reserves.

WASTED ENERGY

A badly-designed house, or one built to inadequate specifications, can come at a high price for its occupants and for the environment. A house that is badly oriented, built from unsuitable materials, or with badly-chosen openings or equipment will be uncomfortable, perhaps even a health hazard, and costly in terms of energy consumption. Just like poor insulation, inexistent solar protection or inadequate ventilation result in heat loss in winter and high temperatures in summer.

www.eere.energy.gov/consumerinfo/save_energy.html
http://edis.ifas.ufl.edu/EH206

ON THE RIGHT TRACK

→ Habitat II: adequate shelter for all

Currently, more than 600 million people in developing countries live in unsanitary conditions and in a rundown urban environment. At least a third of city-dwellers are inadequately housed. In order to remedy this situation, the United Nations has staged two conferences on human settlements to alert the international community to these problems. The second of these conferences, Habitat II, ended with governments pledging that the right to adequate shelter would be fully respected. With this objective in mind, they recommended the creation of all necessary public or private partnerships, and a reinforced role for women in the development of human settlements.

www.un.org/Conferences/habitat

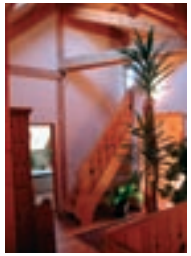
→ Using local resources

Populations in developing countries turn to all kinds of available materials, such as wood, stone, earth, bamboo, lime and cast-offs, to build their homes. Until the last century, this was still a widespread practice in developed countries too. In this way, local techniques and materials have helped shape vernacular constructions within the framework of time and place, and as dictated by needs and know-how. This intuitive approach furthers the notion of world heritage. It can also provide a basis for sustainable construction as it incorporates numerous criteria that respect both man and the environment.

www.international.icomos.org/e_sumary.htm

→ The most common domestic insulators, such as glass wool, mineral wool and foam, are industrially manufactured. And yet agriculture is a source of plant and animal-origin materials –hemp, coir, linen, felt, wool– that are just as efficient and less damaging. **www.designingreen.com**

→ Thermal balance



Domestic energy management is related to the choice of equipment and insulation, but also how the different spaces are oriented and structured. Properly oriented doors and windows, as advocated by bioclimatic architecture, ensure better management of heat and light. A covering of trees or climbing plants as outside insulation is an ideal complement.

www.ornl.gov/sci/roofs+walls/facts/index.html
www.livingroofs.org

ENVIRONMENTAL CONSTRUCTION STANDARDS

Many countries have adopted environmental assessment methods to guide construction choices. The International Council for Research and Innovation in Building and Construction (CIB) has examined the practical application of several of these. Generally speaking, they scrutinize every stage in a building's life from construction –choice of materials, site organization, etc.– to managing energy, water, waste or activity, not forgetting thermal, acoustic and visual comfort. The Haute Qualité Environnementale (HQE) label, a French concept launched some ten years ago, is awarded to architectural projects that limit a construction's impact on the environment while providing a healthy, comfortable and well-insulated interior. The ISO standard applies to a variety of building materials for shell, interior finishes and systems, as does the Qualité Sécurité Environnement (QSE) label. In Canada, the Green Globes method offers an online building and management environmental audit.

www.cibworld.nl
www.greenglobes.com
www.assohqe.org

AT UNEP

→ HABITAT

UNEP has developed a set of resources to help local authorities and decision-makers assess the characteristics of buildings and promote eco-construction. The objective is to develop sustainable construction as a means of reducing health hazards for occupants while adding to their comfort, and to minimize the additional costs associated with this more demanding form of construction. The impacts of design, materials and techniques have been studied. First and foremost a platform for sharing experiences, this network makes possible the local application of high-performance systems and technologies that better respect human health and the environment.

www.unep.or.jp/ietc/sbc/index.asp

PUTTING IDEAS INTO PRACTICE

Individuals

→ CHOOSE THE DIRECTION A HOUSE FACES; INSULATE IT CORRECTLY; CONTROL VENTILATION AND ENERGY CONSUMPTION → RESPECT LOCAL ARCHITECTURAL STYLES → GROW PLANTS ON HOUSE WALLS AS AN ATTRACTIVE PROTECTION → OPT FOR SUSTAINABLE ARCHITECTURE OR A BIOCLIMATIC CONSTRUCTION: ALTHOUGH MORE EXPENSIVE TO BUILD, IT IS MORE ECONOMICAL TO LIVE IN → PREFER INDIVIDUAL METERS IN APARTMENT BUILDINGS (HEATING, WATER, ETC.) → FURBISH AND REPAIR A HOUSE USING ENVIRONMENTALLY FRIENDLY PRODUCTS (SEE "LEISURE") → CHOOSE FSC-CERTIFIED WOOD (SEE "LEISURE") → PREFER NATURAL MATERIALS TO MAN-MADE

Companies

→ RESPECT "GREEN BUILDING SITE" RULES → GLOBALLY EVALUATE THE LIFE-CYCLE COST OF DIFFERENT CONSTRUCTIONS AND BUILD TO ENVIRONMENTAL STANDARDS → RENOVATE EXISTING STRUCTURES; BE ATTENTIVE TO HYGIENE AND HEALTH HAZARDS (ASBESTOS REMOVAL, VENTILATION, ETC.) → INSTALL A SUITABLE WATER AND ELECTRICITY NETWORK AND EQUIPMENT; INFORM STAFF ON WAYS TO SAVE ENERGY AND WATER

Local authorities

→ BUILD LASTING HOUSING AND INFRASTRUCTURE → RENOVATE AND REHABILITATE OLD BUILDINGS WHENEVER THE ENVIRONMENTAL AUDIT OF SUCH OPERATIONS IS ACCEPTABLE → INSTALL AN URBAN HEATING SYSTEM → PLAN LAND USE ACCORDING TO THE LANDSCAPE AND GEOLOGICAL IMPERATIVES → PREFER URBAN DENSIFICATION THAT WILL RATIONALIZE ACCESS TO LOCAL INFRASTRUCTURE AND SERVICES SUCH AS TRANSPORT AND SCHOOLS → PRESERVE GREEN SPACES: LEAVE ROOM FOR COMMUNITY GARDENS AND PEDESTRIAN ZONES → ENCOURAGE ACCESS TO LOCAL ENERGY AND WATER SOURCES → ENCOURAGE INDIVIDUALS TO RESPECT LOCAL ARCHITECTURAL STYLES, CYCLE AND ROLLERBLADE LANES, AND PEDESTRIAN AREAS BY INCORPORATING THEM INTO URBAN MOBILITY PLANS

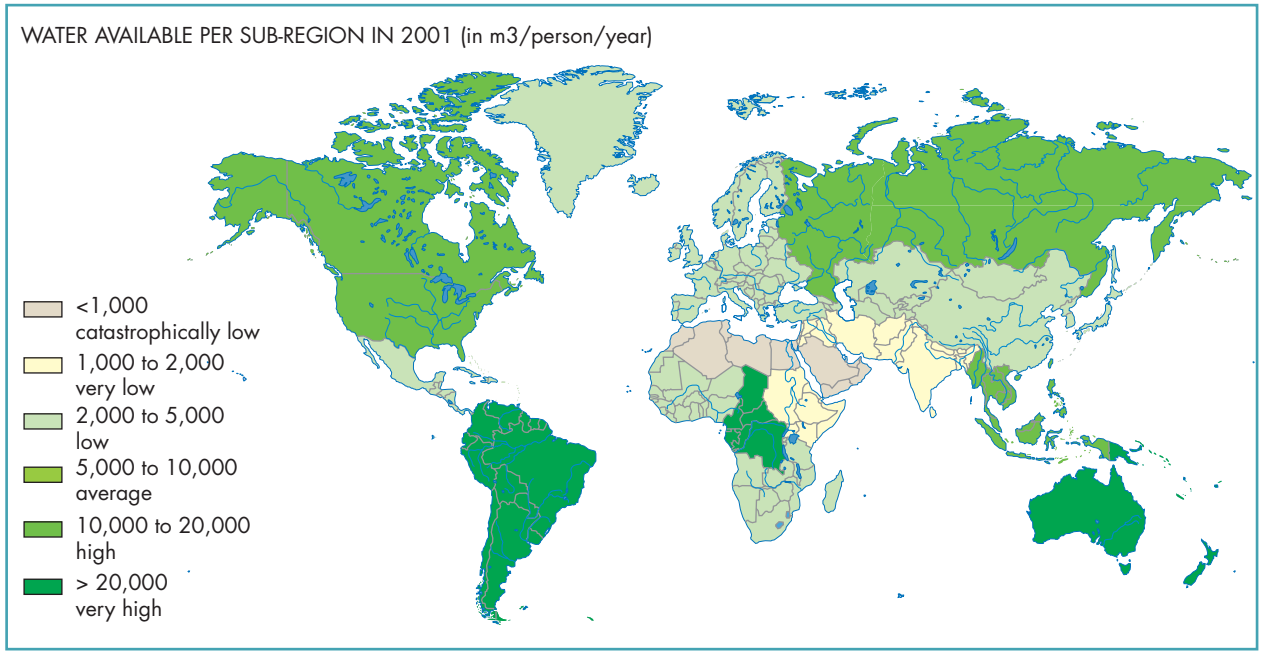
FIND OUT MORE

Sustainable building information system: www.sbis.info
US Green Building Council: www.usgbc.org
Network for an economical and ecological habitat: www.ecosur.org/eng/index.php
US EPA -Green homes: www.epa.gov/greenbuilding/homes.htm
Energy and Environmental Issues in the Building Sector: www.iisbe.org
Environmental design and green building construction portal: www.yourhomeplanet.com
Eco-construction: http://greenhomebuilding.com
United Nations Human Settlements Programme: www.unhabitat.org
International Initiative on a Sustainable Built Environment: http://greenbuilding.ca
Energy & Green Building Resource Center: www.environmentalhouse.org
Sustainable architecture, building and culture: www.sustainableabc.com
Global Ecovillage Network: http://gen.ecovillage.org

WATER

use with care

From thousands of kilometres above, the Earth is blue. With three-quarters of its surface covered by water, it seems no one could ever go thirsty. And yet water is a rare and unevenly distributed resource. Saltwater in seas and oceans accounts for 97.5% of the planet's total reserves. As for freshwater, most of it is frozen in glaciers and perpetual snow, which makes it difficult to exploit. This leaves lakes, rivers, groundwater and clouds, the equivalent of less than 0.01% of available water. Without water there can be no human activity; it is used by agriculture (70%), industry (22%, including water used to produce hydroelectricity and nuclear power) and households (8%). Ten countries, led by Canada and Brazil, share two-thirds of freshwater reserves while some thirty others, mostly in Africa, face frequent shortages. And when water isn't lacking, it is often polluted by intensive agriculture, industrial waste, household detergents ... all factors that affect its quality. As a result, polluted water causes millions of deaths each year. In developing countries, 80% of diseases and deaths are water-related. Over a billion people are still deprived of access to drinking water, and 2.4 billion live without adequate sanitation. Almost invariably, these are the poorest populations. At the Millennium Assembly in 2000, governments allowed themselves fifteen years to reduce by half the proportion of the world's people who are unable to reach or afford safe drinking water. "Water for all" now ranks among the priorities of the international community.



Source : GEO-3, UNEP

↓ A leak can waste dozens of litres a day.

→ **6 L**

per minute, or the average rate at which a tap flows

20% OF THE WORLD'S 10,000 FRESHWATER FISH SPECIES ARE THREATENED BY EXTINCTION.

→ **1,500 L**

of water are needed to grow 1 kg of wheat, 30,000 litres to make a TV screen

IN ARID ZONES, GROWING FRUIT AND VEGETABLES FOR EXPORT PUTS A STRAIN ON MEAGRE LOCAL GROUNDWATER RESERVES.

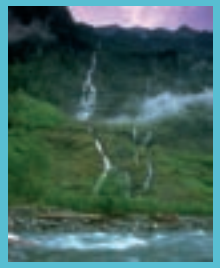
CLIMATE CHANGE

Constantly increasing worldwide, road traffic and the production of goods and services release more than 30 billion tonnes of greenhouse gases into the atmosphere each year. The subsequent rise in global temperatures disrupts the climate and increases the frequency with which natural disasters occur. In the northern hemisphere, precipitation is increasingly violent and irregular while equatorial regions are exposed to typhoons, tornadoes and other extreme phenomena. Over the past fifty years, the number of hydrometeorological catastrophes (caused by water and weather conditions) has significantly increased. Sudden water swell and flooding have altered the structure of watercourses, transformed landscapes and killed thousands of people.

Other changes are taking place more slowly, but with lasting effects. Accelerated glacier meltdown is causing sea level to rise. In some regions, deforestation and climatic water deficits cause the desert to encroach on already drastically arid regions. Exposed to only rare and unpredictable precipitation, there can be no form of life in these areas. Climate change is therefore responsible for some 20% of the worsening world water shortage.

www.uicn.org/places/medoffice/CDCambio_climatico/index_en.html
www.ec.gc.ca/water/en/info/pubs/fs/e_fsa9.htm

↓ Runoff causes nitrogen fertilizers from farmland to find their way into lakes and rivers. Phosphates and nitrates stimulate the growth of algae which, by using up the available oxygen, rapidly asphyxiate fish and other aquatic species. This is known as eutrophication.



↓ One could imagine that rainfall adds to water stocks. In reality the quantity of water on Earth remains stable as it moves in a continuous cycle: only the stages change.

WETLANDS UNDER THREAT

Farming methods and urbanization have taken their toll on wetlands - marshes and swamps - over recent years. Over the course of the 20th century, 50% of them have quite simply disappeared. And yet these undervalued areas play a fundamental role in regulating ecosystems. By naturally modulating water levels, filtering stagnant water and "trapping" carbon, they help limit flooding and pollution caused by runoff. Since 1971, the Ramsar Convention on Wetlands provides for the conservation and wise use of wetlands and their resources.
www.ramsar.org

2 MILLION TONNES OF WASTE ARE POURED INTO LAKES, RIVERS AND STREAMS EACH DAY.

→ **x7**

Over the 20th century, demand for water was multiplied by 7

↓ Women bear most of the burden of fetching water. In Africa, they walk an average six kilometres to the nearest well. And while little girls are waiting to fill their bucket, they aren't in school. Access to water and sanitation is therefore a fundamental right to give girls and boys equal access to education.

DAILY WATER CONSUMPTION :
AMERICAN = 425 L
EUROPEAN = 200 L
PALESTINIAN = 70 L
HAITIAN = 40 L

→ **300**

water-related conflicts have been identified by the United Nations

→ **82,000**

km²: the size of the largest freshwater lake in the world, Lake Superior in North America

BY 2020, WATER CONSUMPTION IS EXPECTED TO INCREASE BY 40% TO SATISFY THE WORLD POPULATION'S NEEDS, AND 17% MORE WATER WILL HAVE TO BE USED TO GROW CROPS.

IMPACTS

Agriculture: a major water consumer

Three-quarters of freshwater from lakes, rivers and underground sources are used in farming. The development of irrigation techniques has substantially increased the amount of farmed land in the world. Today, more than 270 million hectares are irrigated, compared with less than 200 million 30 years ago. Over the same period, water consumption has grown by 1,000 km3. Now 40% of the world's crops are grown using irrigation. And yet this is not always the most efficient technique. Often no more than a third or half of the water actually reaches the plant. Irrigation can therefore be vastly wasteful and weakens local groundwater resources.

Deterioration in water quality

In those regions where it is widely available, water is often polluted. The "guilty parties" include untreated wastewater, chemical effluents from factories, and phytosanitary products. A further and significant proportion of water pollution is the result of runoff, as rain carries chemical fertilizers and pesticides from farmland, and urban drainage. The World Commission on Water has sounded the alarm: "*More than one-half of the world's major rivers are being seriously depleted and polluted, degrading and poisoning the surrounding ecosystems, thus threatening the health and livelihood of people who depend upon them.*"
www.worldwatercommission.org
www.fao.org/docrep/W2598E/w2598e07.htm
www.ec.gc.ca/water/en/manage/poll/e_poll.htm
www.geog.ouc.bc.ca/conted/onlinecourses/geog_210/210_8_5.html

Diverted watercourses

The construction of dams and water-conducting canals has become common practice as a means of optimizing water resources, rationalizing land development, and to supply sufficient water for irrigation, hydroelectric production and households. Of the 227 largest rivers in the world, some 60% have been diverted this way. While multiplying these structures has resulted in increased crop yields and electricity production, reservoirs have also displaced 40 to 80 million people, altered freshwater ecosystems, and disturbed freshwater species. River banks, once non-developable to act as buffer zones in the event of rising water levels, are now being built on. Such disruption has provoked an increase in the number of so-called "natural" disasters.
www.maf.govt.nz/mafnet/rural-nz/sustainable-resource-use/land-management/erosion-risks/erowater.htm

Water-related diseases

While a person can survive several weeks without food, no one can go more than 4 days without drinking. Each year, over 5 million people succumb to water-related diseases. An estimated 6,000 children die each day because of unsafe water supply, sanitation and hygiene. Among the most common of these water-related diseases, malaria continues to take its toll. There are some 100 million cases of malaria with between 1 and 2 million deaths each year. To this can be added almost 4 billion cases of diarrhoea worldwide, killing 2.2 million people.
www.who.int/water_sanitation_health/diseases/en

Tonnes of plastic for bottled water

Sales of bottled water are thriving. Reputedly pure, rich in mineral salts and excellent for the health, mineral water is gaining over tap water. Yet according to the Food and Agriculture Organization of the United Nations (FAO), most municipal tap water is equally as good as water from a bottle. Tap water is also less polluting: each year, 1.5 million tonnes of plastic are produced solely to manufacture water bottles. These bottles also create waste, while exported bottled water must be transported which adds to greenhouse gas emissions.
www.who.int/docstore/water_sanitation_health/GDWQ/Updating/draftguidel/draftchap87b.htm

Industrial effluents

Industry continues to consume substantially less water than agriculture. The main problem it poses concerns effluents. The majority of water used by industry is for cleaning or cooling. Because of this, 80% is polluted by the products or waste that are part of the manufacturing process and discharged, often untreated, into nature. In this way, chemicals such as acids and solvents are left to contaminate ground and surface water.
www.who.int/water_sanitation_health/industrypollution/en/index1.html

ON THE RIGHT TRACK

Adopting alternative irrigation methods, stopping leaks, wasting less and adapting behaviour to a region's geography … all over the world, endless possibilities exist to save water while still satisfying different populations' demands.

→ Bringing water to the suburbs of Tegucigalpa

In Honduras, an unprecedented population explosion has brought the number of people living in the capital to some 850,000, more than half of whom live on the edges of the city. Thanks to a partnership between the United Nations Children's Fund (UNICEF), the national water and sewage authority, and local government, a programme was put in place to supply these communities with water. Over a ten-year period, this project has provided 150,000 people in these peri-urban districts with safe drinking water while drawing on contributions from all the stakeholders. The local community provides labour and construction materials, pays for the water and recovers the full investment cost in taxes. It is also responsible for basic maintenance of installations. The water authority and UNICEF supply technical assistance and financial backing.

www.unicef.org/wes

→ WASH

A decade ago, almost 12 million South Africans had no access to drinking water. Populations in rural areas in particular had to walk kilometres each day to carry water back from a river, stream or well. In 1994, South Africa's new government embarked on an important water-supply programme. Alongside measures taken to bring water to villages, a vast information campaign was launched to prevent epidemics. Water, Sanitation and Hygiene for All, or WASH as it is known, aims to raise public awareness, influence behaviour, and put sanitation, hygiene and safe water at the top of the political agenda. The results of this campaign, implemented nationwide, have been so encouraging that in 2002 the Johannesburg Summit decided to extend WASH to the entire international community.

www.wsscc.org

KIRIBATI, NAURU AND SAINT LUCIA, ALL ISLANDS IN THE BAHAMAS AND THE CARIBBEAN, HAVE DEVELOPED DUAL WATER-SUPPLY SYSTEMS. ONE PIPE CONVEYS WATER FOR CONSUMPTION WHILE ANOTHER SUPPLIES SALTWATER FOR FLUSHING TOILETS.

→ International network of cleaner production centres

UNEP and the United Nations Industrial Development Organization (UNIDO) have set up an international network of 24 cleaner production centres in developing countries with the aim of cleaning up industrial processes and reducing water consumption and pollution. Each centre provides resources, transfers know-how, and trains and advises on how to find the best solutions for specific problems. These centers have helped develop numerous initiatives that preserve water. In Korea, innovative cotton-dyeing techniques save 8 to 10 tonnes of water per tonne of cotton produced. In Costa Rica, 47 potential solutions have been found to cut water consumption by the agri-food industry. In Uganda, fish conservation methods have been reviewed, with a subsequent 30% reduction in the amount of water used.

www.uneptie.org/pc/cp

↓ Waste water can be filtered using a variety of natural processes with plants such as bamboo and water hyacinths.

HYDROPONICS

The basic principle of hydroponics is to grow plants in just water without the need for soil. This is not a recent technique: it was already known to communities in Peru and India would grow plants on the surface of mountain lakes. It is, like aquaponics which combines hydroponics with aquaculture, a valid alternative to traditional cultivation techniques.
www.ag.uiuc.edu/vista/html_pubs.html
www.carbon.org

PUTTING IDEAS INTO PRACTICE

Individuals

→ REDUCE CONSUMPTION AT THE SOURCE → TAKE SHOWERS RATHER THAN BATHS → DETECT LEAKS AND REPAIR THEM STRAIGHT AWAY → DON'T CLEAN TEETH, WASH UP, ETC. UNDER RUNNING WATER → FIT TAPS AND TOILETS WITH LOW-FLOW DEVICES → USE NATURAL HOUSEHOLD PRODUCTS RATHER THAN CHEMICAL OR DANGEROUS ONES → DON'T POUR TOXIC PRODUCTS DOWN THE DRAIN OR DUMP THEM; TAKE PAINT, VARNISH, SOLVENTS, ETC. TO A WASTE COLLECTION POINT → USE LESS DETERGENT AND WASHING POWDER → RESPECT STANDARDS WHEN INSTALLING SEWAGE PIPES OR SEPTIC TANKS → COLLECT RAIN TO WATER THE GARDEN AND WHERE POSSIBLE FOR CLEANING → PREFER LOCAL PLANT VARIETIES OR ONES THAT NEED LESS WATER → REPLACE CHEMICAL PLANT-CARE PRODUCTS WITH BIODEGRADABLE ONES OR OTHER NATURAL METHODS (SEE "LEISURE") → USE WATER CAREFULLY WHEN VISITING HOT COUNTRIES (SEE "TOURISM")

Companies

→ IMPLEMENT AN ENVIRONMENTAL PLAN TO REDUCE WATER CONSUMPTION AND SET TARGETS FOR THE STAFF → TREAT WATER BEFORE DISCHARGING IT, EQUIP SITES WITH NATURAL SEWAGE SYSTEMS, PREFER LOCAL PLANT VARIETIES OR ONES THAT NEED LITTLE WATER FOR LANDSCAPED AREAS, AND AVOID LAWNS WHERE THERE IS LOW RAINFALL → INDUSTRY: USE WATER IN A CLOSED CIRCUIT OR REPLACE IT WITH PULSATED AIR, CHOOSE THE LEAST POLLUTING PRODUCTS POSSIBLE AND MONITOR THEIR USE → AGRICULTURE: USE DRIP IRRIGATION AND TERRACE FARMING TECHNIQUES; GROW LOCAL VARIETIES, VARIETIES THAT NEED LESS WATER AND FRUIT AND VEGETABLES IN SEASON; AVOID CHEMICAL FERTILIZERS

Local authorities

→ INFORM LOCAL RESIDENTS, BOTH ADULTS AND CHILDREN, ON WAYS TO SAVE WATER → BUILD A WASTEWATER TREATMENT PLANT OR CONNECT TO THE EXISTING SEWAGE SYSTEM → MAINTAIN CONTROL OF HYDRAULIC INFRASTRUCTURE → EQUIP COMMUNAL SITES TO USE LESS WATER → ENCOURAGE FARMERS AND BUSINESSES TO MONITOR THEIR WATER CONSUMPTION AND EFFLUENTS; REMIND CARETAKERS TO CHECK THEIR BUILDINGS FOR LEAKS → DESIGNATE "WATER SAVING" DAYS → CLEAN UP WATERCOURSES AND SET UP NATURAL FILTER SYSTEMS → MAINTAIN RIVER BANKS USING NATURAL METHODS AND PROTECT ECOSYSTEMS (MARSHES, LAKES, RIVERS) → PREFER LOCAL PLANT VARIETIES FOR PARKS AND GARDENS → COLLECT RAIN FOR WATERING

↓Rain can be collected and used in various ways, such as to water plants, wash a car or flush the toilets.

VISION 21

At the second World Water Forum in The Hague in 2000, the Water Supply & Sanitation Collaborative Council (WSSCC) presented targets for the Vision 21 programme to provide better access to water around the world.

- By 2015, reduce by half the number of people without access to sanitation facilities or without access to adequate quantities of affordable and safe water.
- By 2025, achieve universal access to hygiene, sanitation and water services.

www.wsscc.org/load.cfm?edit_id=45

FIND OUT MORE

World Water Assessment Programme: www.unesco.org/water/wwap/facts_figures/index.shtml
Unesco Water Portal: www.un.org/issues/m-water.asp
UNEP Global Environment Monitoring System: www.gemswater.org
International Office for Water: www.oieau.fr/anglais/index.htm
Network for the water business: www.waternunc.com
UNEP Division of Technology, Industry and Economics, Production and Consumption Branch: www.uneptie.org/pc/home.htm
Information on the world's freshwater resources: www.worldwater.org
Water web consortium: www.waterweb.org
World Water Assessment Programme: www.unesco.org/water/wwap
Hyperlinks in hydrology for Europe and the world: www.nwl.ac.uk/ih/devel/wmo
Water and Sanitation program: www.wsp.org
World Water Council: www.worldwatercouncil.org
Global Water Partnership: www.gwpforum.org
International Water and Sanitation Centre: www.irc.nl
Centre for Ecology & Hydrology: www.nwl.ac.uk/ih
European Desalination Society: www.edsoc.com
Global Water: www.globalwater.org
International Water Academy: www.thewateracademy.org
International Network on Water, Environment and Health: www.inweh.unu.edu/inweh
Improving water availability: http://globalcrisis.info/wateravailability.html

→ Saving water in the home

A person in a developed country uses up to 425 litres of water per day, when simple equipment will reduce a household's water consumption as well as its water bill. An aerator, which regulates the flow of water from a tap or shower, is the guarantee of substantial savings. In the toilet, a dual-flush cistern will also help limit consumption (a conventional cistern flushes an average 13 litres each time). Households can add to the impact of this type of equipment by changing their everyday habits: prefer showers to baths, wash up in a bowl, fill the sink to shave, find and mend leaks ... all simple ways to save water at home.

http://eartheasy.com/live_water_saving.htm
www.ca.uky.edu/enri/consrv.htm

→ Drip irrigation

Despite consuming 70% of the planet's freshwater reserves, agriculture still sometimes implements inefficient watering systems. Drip irrigation technology, which distributes water through underground pipes, is both efficient and cost-effective. Water slowly soaks into the soil to provide continuous moisture around the plant's roots. Considerably less water is lost, in particular through evaporation. In India, Israel, Jordan, Spain and California, drip irrigation has cut back the amount of water used by 30 to 70% while increasing yields by 20 to 90%.

www.cropinfo.net/drip.htm
www.fao.org/docrep/S8684E/s8684e00.htm#Contents

→ Catching clouds

Since the nineteen-nineties, vast fog nets have sprung up in villages in Yemen, Guatemala, Chile, Nepal and Haiti. Erected two metres above the ground and supported by a wooden post at either end, these polypropylene nets capture droplets. Under the influence of gravity, these suspended droplets run along the netting to fall into a trough. Water collected this way is then conveyed by pipes into a storage tank, ready for use. In the world's most arid desert –the Atacama Desert in Chile- fog collectors provide local populations with 40 litres of water per day and per person.

www.fogquest.org

AT UNEP

→ ATLAS OF INTERNATIONAL FRESHWATER AGREEMENTS

To coincide with the International Year of Freshwater in 2003, UNEP initiated a vast information programme comprising a communication campaign, a website, and a complete listing of United Nations documents on freshwater. UNEP also published the Atlas of International Freshwater Agreements. It details all the transboundary water resources that are covered by an agreement between different countries for improved river management, and gives advice on how to manage others. In Japan, UNEP has also set up the International Environmental Technology Centre. The centre is in the process of compiling a database of water-saving recommendations, technologies and policies. Information is collected from the four corners of the globe, from industrialized nations to developing countries, not forgetting small insular states.

www.earthprint.com/cgi-bin/ncommerce3/ProductDisplay?prrfnbr=232250&prmenbr=27973

→ THE FRESHWATER RESOURCES REPORT: www.unep.org/vitalwater

TOURISM

destination sustainability

They marvel at the pyramids of Egypt or the Taj Mahal. Tourists travel for pleasure, to discover new horizons, to relax, do business, or visit friends and family. Ever more numerous (694 million in 2003), tourists sustain the world's number-one economic activity and an expanding sector: the World Tourism Organization (WTO) predicts there will be 1.6 billion tourists by 2020. Such a flow of people is beginning to weigh heavily on the environment. Air, land or water pollution, and overexploited resources are some of the recurrent issues. Social problems are being multiplied too, with local populations sometimes falling prey to tourists in search of exoticism. And yet tourism, which employs 250 million people around the world, can also be a driving force for development, contribute to better living conditions for populations in host countries, and help preserve natural surroundings. Over recent years, aware that the protection of nature can influence the popularity of destinations, governments, tourism professionals and organizations have taken steps in a sustainable direction.

IMPACTS

Threats to natural resources and biodiversity

Thousands of tourists walking the same paths, admiring the sea-beds, and staying in the same places are bound to have an impact on natural resources. The most crucial issue today is water. Facilities such as golf courses and swimming pools pump thousands of litres from what are already low reserves in many countries. Coral reefs, tropical forests and other fragile ecosystems are also victims of the tourism boom. According to Ocean Planet, 90 of the 109 countries with coral reefs report that their reefs have suffered damage from boats, sewage and trade in coral. This increasing pressure poses a constant and daily threat to biodiversity.
www.biodiv.org/default.aspx

Air, land and sea pollution

The growing number of people moving from place to place adds to air pollution, in particular through greenhouse gas emissions. In 2003, 1.6 billion passengers, two-thirds of whom were holiday-makers, checked in at airports. Water pollution is a problem for certain tourist destinations that have yet to fully master sewage treatment techniques. Finally, disposing of growing mounds of waste is often problematic, in particular at natural beauty spots.
http://europa.eu.int/comm/transport/air/environment/index_en.htm
www.thebmc.co.uk/world/exped/guide_1.htm

Loss of identity

Mass tourism can have an impact on local customs. Under pressure from visitors, rites, traditional festivals and religious ceremonies gradually lose their meaning to be relegated to the rank of tourist attraction. In a similar vein, many holidaymakers' need to feel on familiar ground can encourage local populations to propose hybrid services that are far-removed from their traditions. **http://portal.unesco.org/culture/en/ev.php-URL_ID=11408&URL_DO=DO_TOPIC&URL_SECTION=201.html**

Alarming social repercussions

The development of tourism can sometimes bring with it a rise in criminality and in prostitution among children and young women. Furthermore, the International Labour Organization (ILO) estimates that 10% to 15% of people employed by the tourist industry worldwide are children. **www.ecpat.org**

Economic benefits that bypass local populations

The vast amounts of money generated by tourism do not always find their way into the pockets of local populations. A study by Sustainable Living has shown that in Thailand, 70% of revenues from tourism leave the country. This figure reaches 40% in India and rises to 80% in the Caribbean. **www.oecd.org/document/2/0,2340,en_2649_34389_1826114_1_1_1_1,00.html**

→ 60%
of international air traffic is for tourism

3/4 OF THE WORLD'S CORAL REEFS ARE THREATENED BY MORTALITY BECAUSE OF BLEACHING

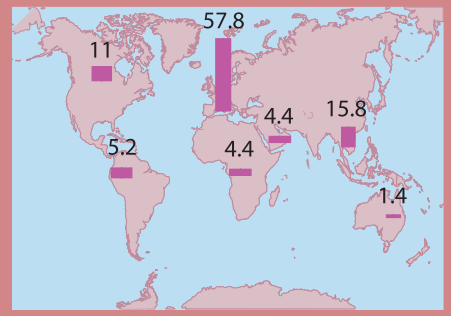
CRUISE SHIPS IN THE CARIBBEAN DISCHARGE OVER 70,000 TONNES OF WASTE EACH YEAR.

↓ Souvenirs made from protected species threaten biodiversity.

→ 11%
of world GDP is from tourism

TOURISM AROUND THE WORLD

With 57.8% of the world's tourists in 2003, Europe clearly stands out at the top of the tourist league, followed by Asia and the Pacific. www.world-tourism.org



↓ Influx of international tourists per world region (% market share). WTO – January 2004

SUSTAINABLE TOURISM

Sustainable tourism is a form of growth for the tourist industry that preserves local resources, improves living conditions, and respects a country's cultural integrity. It lends itself to all forms of tourism, activities and companies. A noteworthy example of sustainable tourism is ecotourism. Built around the discovery of nature and the host country's way of life, it directly contributes to nature conservation.
www.gdrc.org/uem/eco-tour/eco-tour.html

↓ Almost three-quarters of the Mediterranean coastline between Spain and Sicily have been spoiled by hotel complexes.

ON THE RIGHT TRACK

→ Shared tourism in Nepal

The Annapurna region of Nepal has come a long way. From the first lone trekker in 1957, it now draws 60% of the country's visitors each year. Nepal's most popular tourist destination, it has become a victim of its own success. Thus in 1986 the Annapurna Conservation Area Project (ACAP), the first project of its kind in Nepal, was created under the aegis of the King Mahendra Trust for Nature Conservation. Land and resource sharing, conservation schemes and development initiatives benefit local populations and travellers alike. A visitors' fee also goes towards preservation schemes in the region. Local populations, who are actively involved in the conservation project, are therefore sure to directly benefit from the economic impact of tourism in Annapurna.
www.gonomad.com/helps/0010/clay_annapurna.html

→ Flying the blue flag on Europe's coasts

Among the different tourism eco-labels, the Blue Flag scheme, set up in 1985 by the Foundation for Environmental Education, has succeeded in stimulating interest in coastline conservation. Each year the Blue Flag is awarded to cities and marinas for their outstanding results in global environmental management. Applicants for this eco-label are judged on several criteria: water quality, environmental education and information, environmental management, safety and services. There are currently some 29,000 Blue Flag beaches and marinas in 24 countries, and the scheme has been extended outside Europe to include countries in Africa and the Pacific. Each time criteria are adapted to local environmental conditions.
www.blueflag.org

→ The tour operators' initiative for sustainable tourism

Intermediaries between tourists and their destinations, tour operators play a fundamental role in the tourist industry. By facilitating access to services and offering ready-to-go packages, they influence the type of holiday people choose. Having realized that sustainability is critical to their future, some twenty tour operators joined forces in 2000 to create the Tour Operators' Initiative for Sustainable Tourism Development (TOI). Set up with the support of UNEP, UNESCO and WTO, this initiative exists to help its members develop methods that respect the environment and local populations, and to identify and disseminate good practices that are compatible with sustainable tourism. From environmental certification to schemes to support local heritages, all initiatives are welcome.
www.toinitiative.org

AT UNEP

→ PROMOTING SUSTAINABLE TOURISM

Training and awareness activities for tourists and professionals are among UNEP's priority objectives in the field of tourism. Guidelines (good practices in water and waste management, energy consumption in hotels, voluntary initiatives such as eco-labels, etc.), conferences and working groups are some of its activities to lay the foundations for sustainable tourism.
www.uneptie.org/pc/tourism

PUTTING IDEAS INTO PRACTICE

Individuals

→ CHOOSE FACILITIES AND SERVICES FOR THEIR IMPACT ON THE LOCAL ENVIRONMENT, POPULATION AND ECONOMY (CERTIFIED TOUR OPERATORS AND HOTELS, STRUCTURES THAT CONTRIBUTE TO SITE PRESERVATION, ETC.) → FIND OUT ABOUT CUSTOMS IN THE HOST REGION BEFORE SETTING OFF, AND RESPECT THEM → DEPOSIT WASTE WHERE IT IS SURE TO BE RECYCLED AND USE RECHARGEABLE BATTERIES → USE WATER AND ELECTRICITY IN MODERATION → PREFER LOCAL PRODUCTS AND COMPANIES (GUIDES, HANDCRAFTED SOUVENIRS, ETC.) → DON'T COME HOME WITH SOUVENIRS MADE FROM PROTECTED SPECIES

Companies

→ RESPECT THE RULES OF SUSTAINABLE TOURISM WHEN ORGANIZING COMPANY TRAVEL
→ PROPOSE A RANGE OF ETHICAL ACTIVITIES TO STAFF AND THEIR FAMILIES
→ ENABLE STAFF TO TAKE PART IN ECOTOURISM PROJECTS, ORGANIZED BY NGOs.

Local authorities

→ FOSTER THE DEVELOPMENT OF SUSTAINABLE TOURISM BY TRAINING PROFESSIONALS AND IMPLEMENTING AGENDA 21S OR APPROPRIATE POLICIES → ENCOURAGE THE CREATION OF SUSTAINABLE TOURISM INFRASTRUCTURES THROUGH GRANTS AND TECHNICAL ASSISTANCE → MODULATE ACCESS TO TOURIST SITES (BUSES, CYCLE LANES) AND IMPROVE FACILITIES FOR NON-MOTORIZED TRANSPORT → SET UP TWIN-TOWN SCHEMES AND EXCHANGES BETWEEN SCHOOLS AND CULTURAL INSTITUTES

FIND OUT MORE

Ethical and sustainable tourism:
Tourism Concern: www.tourismconcern.org.uk
Friends of Nature travel check:
www.checkyourtravel.info/clever.asp?lang=en

Organizations and networks:
Global Reporting Initiative: www.globalreporting.org
Coalition for Environmentally Responsible Economics:
www.ceres.org
Centre for Sustainable Tourism and Transport of the Breda University of Professional Education (NHTV):
www.sustainabletourism.nl
Sustainable tourism information portal:
http://destinet.ewindows.eu.org
International Coral Reef Information Network (ICRIN): www.coralreef.org

Education and student organizations:
New Academy of Business, education for responsible enterprise:
www.new-academy.ac.uk
International Student Organization for Sustainable Economics and Management (OIKOS): http://oikosinternational.org
Foundation for environmental education: www.fee-international.org
Quebec's declaration on ecotourism:
www.world-tourism.org/sustainable/IYE/quebec/anglais/index_a.html

TEXTILES

fashion that doesn't cost the Earth

Several times a year in the world's fashion capitals, willowy models in dazzling outfits sashay down the catwalk to present the coming season's trends. Each year a handful of designers sets the tone, says what's in and what's not. Chain-stores and mass retailers then adapt their ideas for the man and woman in the street. Fashion feeds a growing industry and ranks textile and clothing as the world's second-biggest economic activity for intensity of trade ($353 billion in 2001). However, stiff competition forces down costs while working conditions, more often than not in developing countries, are far from ideal. The environment pays a heavy price too. To improve conditions for workers and stem pollution, textile producers, manufacturers and distributors are launching the first initiatives built around sustainable development: who knows, ecology may be the next new trend!

IMPACTS

Hard-to-recycle synthetic fibres

The textile industry is shared between natural fibres such as wool, silk, linen, cotton and hemp, and man-made ones, the most common of which are synthetic fibres (polyamide, acrylic) made from petrochemicals. Most of the clothes in our wardrobes contain polyester, elastane or lycra. These cheap and easy-care fibres are becoming the textile industry's miracle solution. However, their manufacture creates pollution and they are hard to recycle (with nylon taking 30 to 40 years to decompose).

ALTHOUGH COTTON ACCOUNTS FOR LESS THAN 3% OF THE WORLD'S FARMED LAND IT CONSUMES ALMOST A QUARTER OF INSECTICIDES AND 10% OF HERBICIDES.

Water pollution and volatile emissions

The textile and clothing industry is a diverse one, as much in the raw materials it uses as the techniques it employs. At each of the six stages typically required to make a garment, the negative impacts on the environment are as numerous as they are varied. Spinning, weaving and industrial manufacture undermine air quality. Dyeing and printing consume vast amounts of water and chemicals, and release numerous volatile agents into the atmosphere that are particularly harmful to our health.

www.p2pays.org/ref/02/01099.htm
www.c2p2online.com/main.php3?heading=163&section=155

Child labour

According to the International Labour Organization, there are 246 million child-workers (age 5 to 14) in the world today. The Asian-Pacific region exploits the most child labour, followed by sub-Saharan Africa, Latin America and the Caribbean. In the textile sector, children are a cheap workforce for picking cotton, hand-sewing, etc. Thanks to the scandals revealed by NGOs and to consumer pressure, global brands are slowly integrating social clauses into their subcontractor agreements. The European Apparel and Textile Organisation (Euratex) and the European Trade Union Federation of Textiles, Clothing and Leather (ETUF:TCL) have also developed a code of good conduct for the profession. **www.ilo.org/ilolex/english/subjectE.htm**

→ Sweatshops are factories that employ people in unacceptable conditions: low wages, long hours, health and safety risks, and non-respect of workers' basic rights.

→ 27

recycled plastic bottles will make one fleece sweater

100% COTTON, 100% POLLUTION

What could seem more natural than a cotton T-shirt? Yet in reality ... First of all, the cotton must be grown; this entails vast amounts of chemical fertilizers and pesticides that pollute and deplete the soil. Despite mechanized harvesting, the cotton industry is still largely dependent on cheap labour. The raw cotton is then dyed, meaning chemicals and heavy metals with harmful effects on the environment. Finally bands of cotton are assembled in factories to be sown into a T-shirt. From wastewater emissions to air pollution and energy consumption, the textile industry weighs heavily on the environment.
www.tve.org/ho/doc.cfm?aid=393&lang=English

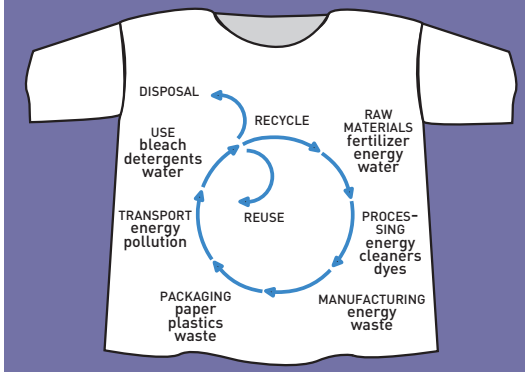
→ 60

million tonnes of fibre clothe 3 billion people

COTTON DRIES OUT THE ARAL SEA

Until the 1960s, the Aral Sea's 66,000 sq. km. yielded annual catches of 40,000 tonnes of fish while its marshes and wetlands extended over 550,000 hectares. All this changed when the former Soviet Union declared Central Asia a cotton-production zone. Industrial-scale drainage for irrigation, pesticides and fertilizers soon got the better of this inland sea. Today, 95% of the marshes and wetlands have given way to sand deserts, and more than 50 lakes covering 60,000 hectares have run dry. Now half its original size, the Aral Sea symbolizes the environmental impact of intensive cotton production.
www.fao.org/ag/magazine/9809/spot2.htm

LIFE CYCLE OF A T-SHIRT



A T-shirt has an impact on the environment at every stage in its life: water and energy consumption, air and water pollution, pesticides, chemical dyes, detergents and waste.

ON THE RIGHT TRACK

→ Clean Clothes

The international Clean Clothes campaign urges textile brands and distributors to take concrete and effective measures to improve the very poor working conditions that prevail in clothes and footwear manufacturing. Since its launch, and thanks to active public interest, this initiative has succeeded in winning companies to its cause.
www.cleanclothes.ch

→ Big-name brands go eco-friendly

For several years now, developed and developing countries have forged partnerships around fair trade in textiles. High-street names have also entered the age of sustainable development. Some use organic cotton or hemp; others process fibres without heavy metals or ensure acceptable working conditions. Notable examples include Agnès B, Katherine Hamnett, Timberland and H&M. **www.earthfashion.com**

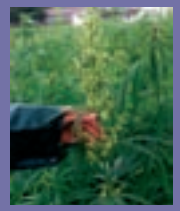
→ Eco-textiles are all the rage

Some companies have developed new eco-friendly textiles from algae, soya, milk casein, bamboo, etc. Ingeo, a natural synthetic fibre made by distilling plant sugar from plant starches such as corn, has made its high-fashion debut thanks to the Italian jean designer Diesel, and soon Versace Sport. Other firms make clothes from natural or recycled materials. In China, Bambro Textiles works with bamboo fiber, spun from bamboo grown in Yunnan province, to propose a range of household linens in this 100% natural and biodegradable material. Patagonia has been manufacturing fleece sweaters from recycled plastic bottles for several years.
www.fostplus.be/tpl/page.cfm?pagId=26&Lg=EN

AT UNEP

→ "SHOPPING FOR A BETTER WORLD"

In 2003 UNEP launched an initiative to urge retail, fashion and communication professionals to pool their experience and find new "ethical and ecological" products.
www.uneptie.org/media/review/vol26no1/UNEP0103.PDF



HEMP, THE NATURAL CHOICE

Good news for farmers: hemp is making a big comeback in the fashion world. Indeed, hemp grows without fertilizer, requires minimum attention, doesn't deplete soil nutrients and is easy to harvest. As a result most hemp by-products are now certified organic.

PUTTING IDEAS INTO PRACTICE

Individuals

→ ASK MANUFACTURERS ABOUT RAW MATERIALS AND MANUFACTURING CONDITIONS → PREFER MATERIALS AND PRODUCTS THAT ORIGINATE IN THE COUNTRY OF PURCHASE → DON'T BUY CLOTHES FROM COMPANIES THAT MAINTAIN POOR WORKING CONDITIONS → PASS ON CLOTHES YOU NO LONGER WEAR → CUSTOMISE FOR A NEW LOOK → WASH CAREFULLY (CHOOSE DETERGENTS THAT POLLUTE LESS AND USE SMALLER AMOUNTS) AND CARE FOR YOUR CLOTHES (E.G. WAX LEATHER).

Companies and organizations

→ SUPPLY ECO-FRIENDLY AND "ETHICALLY CORRECT" WORK-CLOTHES AND UNIFORMS → ENCOURAGE TRADE IN "ECOLOGICAL CLOTHES" (THROUGH GRANTS AND ASSISTANCE) → ORGANIZE EVENTS (FASHION SHOWS, DEBATES, CHRISTMAS MARKETS) TO PROMOTE ECO-TEXTILES → PREFER ECOLOGICALLY CERTIFIED CORPORATE GIFTS AND SOLIDARITY INITIATIVES → USE CERTAIN TEXTILE-BASED RECYCLED PAPERS

FIND OUT MORE

Ethical clothing:
Worldwide Responsible Apparel Production (USA):
www.wrapapparel.org
Fair Labor Association (USA):
www.fairlabor.org
Criteria for the European eco-label for textile products:
http://europa.eu.int/comm/environment/ecolabel/pdf/infokit/new_2002/fact_textiles_2002_en.pdf
European eco-label for footwear:
http://europa.eu.int/comm/environment/ecolabel/pdf/infokit/new_2002/fact_shoes_2002_en.pdf
Online video: The Flowering of Eco-fashion:
www.tvlink.org/templates/main_v.cfm?id=65&video=43&lang=en&dg=env
Information on the environment, textiles, leather and footwear:
www.unctad.org/en/docs//ditcted3_en.pdf
Sustainable cotton project:
www.sustainablecotton.org
Organic cotton production certification:
www.skal.com
Organic cotton clothes:
www.organiccottondirectory.net
Eco-friendly clothing brands:
www.americanapparel.net
www.patagonia.com

NICTs: NEW INFORMATION AND COMMUNICATIONS TECHNOLOGIES
advancing sustainable development

There was a time when news travelled by pony express and carrier pigeon, then by telegraph, bicycle, train, boat and plane. Today, letters are sent electronically, along fibre optic networks and telephone lines, a transformation that has shaken the world. New information and communications technologies (NICTs), which have expanded rapidly over the past decade, are revolutionizing as much the workplace as personal relations. From one end of the planet to the other, contacts are being forged, news is circulating, knowledge is being shared. Online data and studies provide rapid and easy access to information, provided the necessary equipment is available. Thanks to these technologies, people can work together, share in-the-field experiences, tell others about existing resources, keep in touch, speed up administrative formalities, and sell their products far and wide. Particularly egalitarian, NICTs are the wonder solution for companies that want to work together, and for ordinary citizens with a thirst for knowledge and exchange. Governance and skills transfer are central to the implementation of these tools for sustainable development.

IMPACTS

Rising energy consumption

No computers means no connections. Yet at each stage in their manufacture –extraction, processing, destruction or recycling of materials- computers pollute and consume energy. They also demand substantial amounts of electricity in order to function for extended periods; some computers are never switched off. Each year, the world's computers use as much electricity as a country the size of Brazil. Increasingly, manufacturers are adopting solutions to reduce their products' energy consumption both during production and use.
www.worldwatch.org/pubs/paper/115

TO REACH 50 MILLION PEOPLE IN THE UNITED STATES, IT TOOK THE RADIO 38 YEARS, TELEVISION 13 YEARS, AND THE INTERNET JUST 4 YEARS

E-waste

The quest for ever faster, more powerful equipment means computers are replaced on an increasingly regular basis. The complexity of their parts, which must satisfy the need for greater functionality and sophistication, makes it difficult to manufacture these devices and manage the electronic waste they produce. Monitors contain heavy metals –lead and cadmium–, diodes contain toxic substances –arsenic and zinc oxide– and circuit boards contain mercury. Discarded monitor cases made from unidentified plastic release dioxins when improperly incinerated. The temptation of the few grams of gold inside a computer has also meant that innumerable personal computers (PC) in working order have been destroyed. Silicon Valley, birthplace of the computer industry, harbours to the highest concentration of hazardous-waste sites in the United States. **www.ewaste.ch**
www.epa.gov/epaoswer/osw/elec_fs.pdf

Psychological dependency

Growing ranks of young people are hooked on the chat rooms, forums and games they find online. Taken to excess, the Internet can become genuinely addictive. Thousands of Internauts have also developed a passion for day trading. Cyber-addiction has evolved into a modern-day pathology: Internet addicts spend day and night in front of their computer, living life through the virtual situations they have invented. They can show signs of compulsive behaviour and cut themselves off from others. Psychiatric services are increasingly consulted by patients who are addicted to computer games and the Internet.

→ The amount of e-waste generated in Europe increases each year by **3 to 5%**

→ Over **1** billion computers have been sold across the world since 1975

→ **600** million people worldwide have access to the Internet

→ **x2** the number of Internet connections in the world doubles every 5 months

↓ Working on a computer involves staring at a fixed point. Dry eye syndrome, eyestrain, fatigue and headaches are among the most common complaints.

COMPUTERS:
REUSE, RECYCLING AND ECO-DESIGN

That used computers should be passed on to individuals and non-profit groups seems like a good solution, though one that is restricted by too high refurbishing costs. Recycling electronic goods and computers, still no easy task, will become compulsory in Europe as from August 2005 when the directive on waste electrical and electronic equipment (WEEE) comes into effect. Currently, several life-cycle audits are performed to minimize, from the design stage, a computer's environmental impact.
www.europarl.eu.int/workingpapers/envi/pdf/brief3en_en.pdf

↓ Words such as"cyberwork", "cybersciences", "cybergovernment" and even "cyberecology" have made their way into everyday parlance. Defined at the World Summit on the Information Society, cyberecology refers to the role of NICTs in sustainable development. **www.itu.int/wsis/index.html**

ON THE RIGHT TRACK

→Local Agenda 21s on the Web

Most large European cities have adopted their own Agenda 21. These are long-term programmes, based on the principles agreed in Rio. Their definition and application involves the active participation of all local players. As such, NICTs can facilitate consultation and help structure initiatives. Since October 2003, France's Comité 21 has proposed a portal for all the local Agenda 21s in Europe and the Mediterranean Basin.
www.agenda21.org

↓ Valenciennes in France has founded its own Web TV, accessible by all the town's residents. They can suggest topics and talk to elected representatives and other local figures. **www.valenciennes.fr**

THE TEN YEARS SPANNING 2005 TO 2014 HAVE BEEN DECLARED "UNITED NATIONS DECADE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT" BY THE UNITED NATIONS GENERAL ASSEMBLY. NICTS ARE AMONG THE TOOLS THAT THIS INITIATIVE WILL DEVELOP.
http://portal.unesco.org/education/en/ev.php-URL_ID=27234&URL_DO=DO_TOPIC&URL_SECTION=201.html

→Recycling computers in Japan

Since Japan introduced its law for the promotion of effective utilization of resources in October 2003, households' PCs are collected and recycled. This operation is organized by the Japan Electronics and Information Technology Industries Association (JEITA) with the backing of 36 computer manufacturers. A logo on the computer indicates it will be collected and recycled at no extra cost via the national post office network. The scheme extends to the collection and recycling of office computers and older machines, for which a fee is charged.
www.japanfs.org

→ NICTs and developing countries

NICTs are a valuable tool for local development, education and connecting people in developing countries. They are also a means of emancipation and expression for women. Various initiatives exist to bring NICTs to remote regions. The Swaminathan Foundation, with the support of international aid agencies, has connected a dozen villages in southern India to the Internet. Job offers, small ads, advice and local information are diffused online, with active contributions from villagers.
www.apcafricawomen.org/full.rtf
www.unfpa.org/icpd/10/icpd_fgc.htm
www.mssrf.org

→ Global networks

Numerous networks use the Internet not only as a means of connecting the different stakeholders involved in sustainable development, but to exchange good practices, diffuse knowledge, mobilize citizens, react to events and propose solutions.
www.sustainablealternatives.net

AT UNEP

→ GESI: GLOBAL E-SUSTAINABILITY INITIATIVE

In 2001, a number of major information and communications technology companies grouped together to launch the Global e-Sustainability Initiative (GeSI) with the support of UNEP. Its objective is twofold: to inform and train NICT companies on the new products and services with which they can improve their environmental performance, and to promote NICTs that will foster sustainable development.
www.gesi.org

THE SEMANTIC WEB

The principles of sustainable development embrace multiple domains, and picking up these threads among the mass of online information about sustainable development is no easy task. The Semantic Web project organizes information and proposes classification solutions.
www.mondeca.com/faqs.htm

PUTTING IDEAS INTO PRACTICE

Individuals

→ SHARE IDEAS AND EXPERIENCES THROUGH FORUMS, OR JOIN A NETWORK → TRAIN IN NEW SKILLS → FIND PRACTICAL, CULTURAL AND PARTICIPATORY INFORMATION ONLINE → DON'T STAY ONLINE FOR HOURS; GO ON USING OTHER MEANS OF COMMUNICATION → DON'T LEAVE A COMPUTER ON STANDBY MODE → CHOOSE A STURDY MODEL THAT WILL EVOLVE WITH NEEDS AND KEEP IT IN GOOD WORKING ORDER → TAKE OLD ELECTRONIC GOODS BACK TO THE STORE OR TO A WASTE COLLECTION POINT → DON'T THROW AWAY A WORKING COMPUTER; DONATE IT INSTEAD

Companies

→ SET UP AN INTRANET WITH A NEWSLETTER, SUGGESTIONS BOX AND SMALL ADS → CIRCULATE MEMOS AND NEWSLETTERS BY E-MAIL → TAKE PART IN INTERNATIONAL EXCHANGES TO SHARE KNOW-HOW AND EXPERIENCE → INSTALL A NETWORK THAT ALLOWS EQUIPMENT TO BE COMPLETELY SWITCHED OFF → TAKE OUT A MAINTENANCE CONTRACT FOR THE COMPANY'S COMPUTERS → WHEN REPLACING COMPUTERS, GIVE THE OLD ONES TO STAFF OR DONATE THEM TO NON-PROFIT GROUPS

Local authorities

→ SET UP A WEBSITE GIVING RESIDENTS ACCESS TO INFORMATION, SERVICES, SMALL ADS, LOCAL NETWORKS, TV AND SPECIALIST DIRECTORIES → PROVIDE FREE INTERNET ACCESS IN TOWN HALLS, SCHOOLS AND LIBRARIES → WORK WITH SOLIDARITY ORGANIZATIONS TO SALVAGE COMPUTERS IN GOOD CONDITION FROM WASTE COLLECTION POINTS → DONATE THIS EQUIPMENT TO SCHOOLS AND CHARITIES → PROVIDE A HOME COLLECTION SERVICE → DEVELOP E-LEARNING PROJECTS

FIND OUT MORE

International Council for Local Environmental Initiatives: www.iclei.org
Information society and policy: www.qlinks.net
European Schoolnet: www.eun.org
Gateway for cleaner production: www.cleanerproduction.com
Global Network of Environment and Technology: www.gnet.org
Contribution of NICTs to sustainable development: www.tic21.com
United States National Training and Information Center: www.ntic-us.org
Silicon Valley Toxic Coalition: www.svtc.org
Environmental Information Circulation and Monitoring System on the Internet: www.sisei.net
Information and Communications Technology and the Environment in Asia and Pacific: www.icteap.org
Electronic waste guide: www.ewaste.ch
Electronics recycling initiative: www.nrc-recycle.org/resources/electronics/index.htm
International Telecommunication Union: www.itu.int

MOBILITY

the world on your doorstep

A symbol of power and freedom, transport plays a fundamental role in society. It makes possible the movement of goods and people, and promotes the expansion of trade, employment, education and leisure. Countries in the North and South have not experienced the same rate of development in transport, an indicator of economic health. Although there are some 700 million vehicles on the world's roads, ten times more than in 1950, 80% of the planet's population has no access to motor vehicles. Their sole means of transport are horses, bicycles, rickshaws or their own two feet ... Elsewhere, cars are the most popular form of motorized transport (53%), ahead of buses (29%), trains (9%) high-speed trains and planes (9%). A symbol of progress, motor vehicles also cause pollution. The energy they use (mainly from oil) accounts for more than a quarter of world demand. They contribute to climate change, add to air pollution, and use up natural resources. They also disfigure landscapes and create noise pollution that can make life unbearable for local populations. Over recent years, industry and governments have gradually adopted a new line of conduct to encourage the planet to move towards "greener" transport.

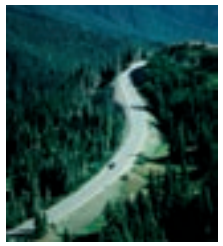
IMPACTS

Air pollution and health

Coaches, buses, trucks, motorbikes, boats, trains and planes: these different forms of motorized transport account for half the air pollution in the world. In built-up areas in developed countries, this can rise to 80%, made worse by an increasing problem of traffic jams (+60% in ten years). Motor vehicles emit large quantities of carbon monoxide, hydrocarbons, nitrogen oxide and fine particles: how much depends on the type of fuel being used. All around the world, cities are wrapped in a suffocating blanket of pollution while the World Health Organization (WHO) estimates that these emissions kill 500,000 people each year and cause respiratory diseases. One in seven European children is asthmatic... and the ratio is increasing.

http://europa.eu.int/scadplus/leg/en/s15004.htm
www.envirohealthaction.org/pollution
http://airnet.iras.uu.nl

1 LITRE OF ENGINE OIL CAN PREVENT OXYGENATION OF FLORA AND FAUNA OVER 10,000 SQ. M. OF WATER, AN AREA THE SIZE OF A FOOTBALL PITCH.



A blot on the landscape

Roads and railways change the face of the countryside; they also break up natural habitats, meaning animals can be cut off from other members of their species and their living environment.

Road accidents on the rise

Each year, 1,2 million people are killed on the roads and 50 million are injured worldwide. In developed countries, as the number of vehicles grows and average speed increases, traffic accidents have become the main cause of death among young people. The WHO has warned that if current trends continue, the number of deaths and disabilities due to road accidents will rise by 60% between now and 2020. Hardest-hit will be developing countries, where a growing share of the population uses motorized transport in an area that offers no protection, sidewalks or safe crossings for pedestrians.

http://www.who.int/world-health-day/2004/infomaterials/en/brochure_jan04_en.pdf

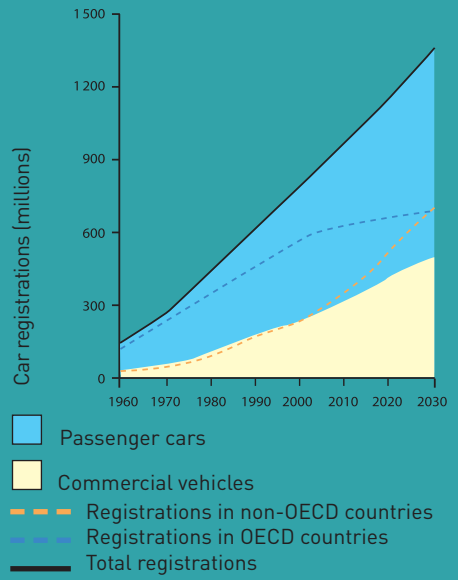
→ **+9%**
per year: the increase in air traffic since 1960

→ **1**
car journey in 3 in cities is for less than 8 km

CARS IN EVER-GROWING NUMBERS

People in developed countries change cars too often. New models may be less polluting, the problem of how to dispose of them remains. A European directive has set a target to increase from 70% to 85% re-use and recovery of end-of-life vehicles.
http://europa.eu.int/comm/environment/waste/elv_index.htm

NUMBER OF CAR REGISTRATIONS WORLDWIDE FROM 1960 TO 2030 (FORECAST)



↓ Few people in developing countries have access to even modest transport services. Instead they walk, or cram into small trucks that are especially polluting. Second-hand cars and buses, often sent from Western countries, are poorly maintained, overloaded, and sometimes have inexperienced drivers.

ON THE RIGHT TRACK

→ Car-sharing

The car is a terrific means of personal mobility. However, it also has numerous drawbacks that are all the more evident in our city centres. In many countries, car-sharing has shown it is possible to satisfy the need for a car without necessarily owning one. The basic principle is that of car hire but for very short periods (sometimes just an hour or two). The cars are owned by a group of people, or by a company or non-profit group. Money-saving and less polluting, car-sharing also helps solve parking problems (cars spend significantly more time parked than on the road), brings people into contact. One shared vehicle replaces six cars, considerably reducing bottle-necks and traffic in built-up areas. Along similar lines, car-pooling and taxibuses -provided they are well-maintained- offer valid alternatives to individual car ownership.

www.carsharing.net
http://eartheasy.com/live_car_sharing.htm

THERE ARE **2** KINDS OF ECO-FRIENDLY, GAS-BASED FUELS: LPG, A BLEND OF PETROL AND NATURAL GAS WHOSE MAIN COMPONENT IS PROPANE, AND NGV, OR NATURAL GAS FOR VEHICLES.

→ Intermodal transport in Europe

Created from the Maastricht Treaty, the Trans-European Network exists to better connect European transport networks by encouraging intermodal transport (roads, railways, airports). Guidelines help structure national strategies and develop transport on a Europe-wide scale. The Lyon-Turin-Trieste high-speed train connection is one of the priority projects.

http://europa.eu.int/comm/transport/intermodality/index_en.htm

↓ In Europe, car manufacturers are committed to reducing carbon dioxide emissions from 170 to 140 g/km.

→ Local biofuels

A village cooperative in Mali produces Diester from jatropha oil (a local crop) which it then uses as tractor fuel. Elsewhere, diesel engines run on rapeseed, sunflower, soya and peanut oils. In the United States, drivers might fill their tanks with a blend of corn ethanol (1% of total fuel consumption). In Brazil, thanks to a government-sponsored scheme, a major part of vehicles run on ethanol, this time made from fermented sugarcane. Plant-based biofuels are now a viable alternative to petrol.

www.greenfuels.org/index.html

NEW ENGINES

As part of a global environmental protection strategy, for several years car manufacturers have been working on various types of low-pollution engines. Vehicles can now be electric, hybrid (petrol and electricity), high-pressure direct diesel (HDi), direct injection petrol, or run on fuel cell (known also as hydrogen cell). This last solution looks especially promising as it emits neither carbon dioxide nor other polluting gases. The electric engine runs on hydrogen, leaving behind nothing but water vapour. Research must now focus on solutions that will overcome the difficulties involved in storing and producing this gas.

Recommended reading: *UNEP's Natural selection: alternative fuels and vehicle technologies.*

AT UNEP

→ GREENER DRIVING

UNEP, in conjunction with partners from the automotive industry, has put together a campaign to promote greener driving, with videos and comics to encourage a change in behaviour. Themes include choosing the right form of transport, checking tyre pressure, changing tyres, and driving styles ... Following this advice should cut down the number of accidents, avoid stress at the wheel, and reduce fuel consumption by 25%.

www.greener-driving.net

PUTTING IDEAS INTO PRACTICE

Individuals

→ CHOOSE THE MOST EFFICIENT AND ECOLOGICAL MEANS OF TRANSPORT FOR EACH JOURNEY, E.G. WALK OR CYCLE SHORT DISTANCES → TAKE THE TRAIN WHEN TRAVELLING BETWEEN CITIES → TAKE ADVANTAGE OF CAR-POOLING AND CAR-SHARING SERVICES → BEFORE BUYING A NEW CAR, FIND OUT ABOUT ITS FUEL CONSUMPTION, CO_2 EMISSIONS, AND CLEAN ENGINES SUCH AS ELECTRIC, HYBRID AND LPG → AUTO-DIAGNOSIS YOUR CAR → HAVE YOUR CAR REGULARLY SERVICED, AND DRIVE SMOOTHLY (CUTS FUEL CONSUMPTION BY AROUND A QUARTER)

Companies

→ MAKE IT EASIER FOR STAFF TO COMMUTE BY PUBLIC TRANSPORT, E.G. PROVIDE A SHUTTLE SERVICE BETWEEN THE COMPANY AND THE NEAREST TRAIN STATION → PREFER "CLEAN CARS" FOR THE COMPANY FLEET AND HAVE THEM REGULARLY SERVICED → SET UP RATIONALIZED TRANSPORT PLANS FOR STAFF THAT COMMUTE TO WORK OR FOR BUSINESS TRIPS; PREFER THE TRAIN FOR SHORT AND MEDIUM DISTANCES → DEVELOP PARTNERSHIPS WITH LOCAL AUTHORITIES WITH FINANCIAL INCENTIVES TO PROMOTE PUBLIC TRANSPORT

Local authorities

→ PROPOSE QUALITY TRANSPORT TO SUIT DIFFERENT PEOPLE'S NEEDS, E.G. SET UP A CAR-SHARING STRUCTURE, PROMOTE CYCLE-TAXIS AND TAXIBUSES → IMPROVE EXISTING SERVICES (PUNCTUALITY, CUSTOMER INFORMATION...) → ENCOURAGE ECOLOGICAL PUBLIC TRANSPORT: TRAMS AND ELECTRIC BUSES → CUT DOWN CITY-CENTRE TRAFFIC AND DEVELOP PARK-AND-RIDE SERVICES → FACILITATE THE CREATION OF INFRASTRUCTURE SUPPLYING ALTERNATIVE FUELS → ENCOURAGE ALTERNATIVE TRANSPORT WITH CYCLE LANES, ROLLERBLADE TRACKS, AND PEDESTRIAN ZONES AS PART OF AN URBAN MOBILITY PLAN

FIND OUT MORE

A complete listing of light rail, tramways and subways around the world: **www.lrta.org/world/worldind.html**
International association of public transport:
www.uitp.com
European cyclists' federation:
www.ecf.com
Association of European cities interested in electric vehicles:
http://citelec.vub.ac.be/en
Alternative Fuel Data Center:
www.eere.energy.gov/cleancities/afdc
Canadian renewable fuels association:
www.greenfuels.org
The Institute for Transportation and Development Policy:
www.itdp.org
Eurocities for a New Mobility Culture:
www.access-eurocities.org
US carsharing network:
www.carsharing.net

LIFESTYLES

living for today and for tomorrow

Recent demographic studies predict that the world's population could grow by 50% between now and 2050, meaning 9 billion people will be living on our planet. The earth's resources cannot keep pace. The gap between wealthy countries and the most needy therefore looks set to widen. More and more people today are caught in an endless cycle of buying and throwing away, seeing consumption as a means of self-fulfilment. Society tends to judge a people's success by their possessions, creating a context in which the notions of sharing and equality are increasingly dismissed. The urge to spend motivates many people in North and South alike. The spread of this lifestyle encourages companies to develop increasingly competitive means of production that take more out of the earth's natural resources and the environment: shrinking biodiversity, air, water and ground, pollution, etc. At the same time, a new breed of eco-citizen is emerging, with the growing awareness that individuals can help shape the planet's future by adapting their lifestyle, eating habits, or means of transport. What we choose to buy is also a means to express ourselves and support projects that show solidarity with others. An attitude that non-governmental organizations strongly encourage.

IMPACTS

Greenhouse gases

In today's global economy, companies are delocating production, importing raw materials and exporting finished goods. Basic consumer goods cross national borders, sail the oceans and are carried thousands of kilometres before ending up on supermarket shelves. Whether by boat, plane or truck, transporting these goods consumes a lot of energy and adds to the problem of greenhouse gases that are responsible for climate change.

www.science.gmu.edu/~zli/ghe.html
www.physicalgeography.net/fundamentals/7h.html

20% OF THE GLOBAL POPULATION CONSUMES 75% OF NATURAL RESOURCES.

Mountains of waste

As consumption of disposable products, individual portions and overwrapped goods grows, so does the amount of waste they produce. In developed countries, the average individual throws away 1 kg of rubbish a day. Each year the United States bins 39 billion knives and forks and 29 billion plates, half of them plastic. India produces 4.5 million tonnes of plastic waste each year. A disaster, given that polyethylene, a component of plastic bags, takes over 100 years to decompose.

www.epa.gov/epaoswer/osw
http://europa.eu.int/comm/environment/waste/index.htm
http://europa.eu.int/comm/environment/waste/packaging_index.htm

Recycle-resistant appliances

Stereos, VCRs, kitchen appliances... our homes are filled with electronic goods, designed to be replaced every few years in keeping with new trends, tastes and technologies. They generate huge amounts of polluting waste in various forms. The diversity of materials and the presence of heavy metals make them hard to recycle. Manufacturing these increasingly sophisticated appliances also demands quantities of raw materials, energy and water (30,000 litres of water to make a computer screen) The solution : choose sturdy, quality models that will adapt to new uses and can be repaired.

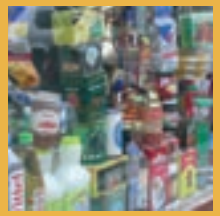
www.europarl.eu.int/workingpapers/envi/pdf/brief3en_en.pdf

→ **1.2**

billion people do not have access to drinking water

→ **4**

other planets would be needed if everyone consumed like Americans

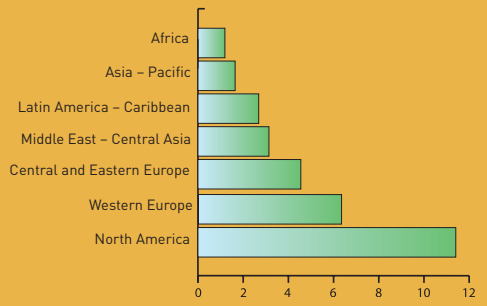


→ **10%**

more waste is produced in Europe each year

ECOLOGICAL FOOTPRINT: MEASURE YOUR IMPACT ON THE EARTH'S RESOURCES

The planet does not have infinitely renewable resources. The ecological footprint is one of the new indicators to evaluate the impact our lifestyle has on these resources. It converts the products and services we use into global hectares and measures the pressure we exert on nature to satisfy our demand for production, consumption, shelter, waste disposal, etc.
Calculate your ecological footprint at:
www.earthday.net/footprint/index.asp



ECOLOGICAL FOOTPRINTS AROUND THE WORLD
(GLOBAL HECTARES PER PERSON IN 1996)

↓ Overproduction on the one hand, poverty and overpopulation on the other cause the destruction of natural resources. 30 hectares of forest disappear in the world every minute through industrial activity in the North, and the gathering of wood and food in the South: the equivalent of 42 football pitches.

ON THE RIGHT TRACK

→ Green purchasing

Around the world, more and more businesses, universities and public authorities are instating responsible procurement policies. Growing ranks of organizations now routinely opt for energy-saving light bulbs, solar power, wind energy and organic products to replace more conventional supplies that consume vast amounts of water, energy and transport resources. In western countries, networks are springing up to encourage this change in mentality. Some fifty local authorities have joined the International Council for Local Environmental Initiatives' Buy It Green Network, which coordinates sustainable procurement initiatives at the local level. Over 275 universities have signed the Talloires Declaration whose ten-point action plan encourages them to establish environmentally sound policies and practices.

www.icsc.ca
www.unchs.org/programmes/sustainablecities
www.iclei.org
www.ulsf.org/programs_talloires.html
www.worldwatch.org/press/news/2003/07/25/

→ Finansol : investing for others

Other recent years, demand has emerged for socially responsible investment products. Finansol (finance and solidarity), a non-profit structure under the aegis of the Charles Léopold Mayer Foundation for the Progress of Humankind, was created by financial institutions in response to this demand. It offers an alternative to traditional savings products. Finansol works within pro-solidarity finance circuits by collecting funds, which are then invested in sustainable development projects, fair trade initiatives, community development schemes, etc.
www.finansol.org/International/anglais.asp

→ Supply chain management

Companies implement tools and methods to provide their customers with the right products in the right quantities, in the right place and at the right time. This process, known as "supply chain management", is involved at every stage of production and distribution to help reduce stocks and delivery times, and so avoid unnecessary energy consumption and waste.
www.supply-chain.org

SUSTAINABLE CONSUMPTION: VOTE WITH YOUR PURSE

In the majority of affluent countries, responsible consumption is often synonymous with consuming less. In poor countries meanwhile, it means consuming more and better quality products. The aim is to live a better life and to strike a balance between our desires as consumers and our responsibility as citizens. This means choosing a lifestyle that is the least detrimental to the environment and respects a person's right to live and work in good conditions.

AT UNEP

→ YOUTHXCHANGE

Training tomorrow's eco-citizens

UNEP and UNESCO have devised a training kit to empower young people in adopting sustainable choices in their daily lives. Through practical information and a dynamic and informative approach, the kit highlights the interrelation between lifestyle choices and quality of life, utilization of resources, production of waste, working conditions, etc. It also shows how responsible consumption can positively influence companies' production methods.
www.youthxchange.org

PUTTING IDEAS INTO PRACTICE
(see the other sheets too)

Some ways to reduce your ecological footprint:

→ BEFORE BUYING, ALWAYS ASK YOURSELF DO I NEED THIS? WHERE AND HOW WAS IT MADE? ETC. → PREFER SOLID, EASY-MAINTENANCE, NON-DISPOSABLE PRODUCTS THAT CAN BE REPAIRED, AND PRODUCTS MADE FROM RECYCLED MATERIALS → IN CITIES, WALK OR TAKE PUBLIC TRANSPORT → DON'T WASTE WATER → DON'T USE ENERGY POINTLESSLY: LIGHTS LEFT ON, APPLIANCES ON STANDBY, ETC. → CHOOSE GREEN PRODUCTS AND COMPANIES WITH ACCEPTABLE SOCIAL AND ENVIRONMENTAL POLICIES → CHOOSE ECO-DESIGNED PRODUCTS THAT CONSUME LESS ENERGY.

FIND OUT MORE

UNDP human development reports:
www.undp.org/dpa/publications/hdro/98.htm

Ethical Investment Research Service:
www.eiris.org

Environmental business practices:
www.greenbiz.com

UNEP Sustainable Consumption:
www.uneptie.org/sustain

Ideas for an ecological lifestyle:
www.worldwatch.org
www.ec.gc.ca/eco/main_e.htm
www.eartheasy.com
www.ergo-living.com
www.envirolink.org

Environmental education network:
www.eelink.net

International Institute for Sustainable Development
www.iisd.ca

Pollution prevention measures:
www.greenprofit.net

Sustainable development for local authorities:
www.sustainable-cities.org

European Parliament critical analysis of the ecological footprint:
www.europarl.eu.int/stoa/publi/pdf/summaries/00-09-03sum_en.pdf

Resources to help organizations reduce their ecological footprint:
www.bestfootforward.com

Global Footprint network:
www.footprintnetwork.org

→ Recycling plastics, made mainly from oil by-products, saves 70% to 80% of their weight in crude oil.

LEISURE : DO-IT-YOURSELF, GARDENING

the pleasure of creating and preserving

For some people, banging in a nail, mending a floorboard or painting a wall are leisure activities for whenever they have a few moments to spare. For others, hammering and sawing are daily obligations if they are to keep a roof over their heads and a decent home. The former buy their "do-it-yourself" (DIY) supplies; the latter pick them up in the street or use what nature provides. When it comes to gardening, the disparity is the same: hoeing, planting and watering can be a pleasant hobby or a means to feed a family. In developed countries, arts and crafts are all the rage and gardening has become a popular and rewarding physical activity. However, recreational DIY and gardening pose problems from an environmental point of view, including wastefulness, water pollution, overexploitation of forests and waste treatment and disposal. For the past few years, green products, good practices and natural materials have meant that Sunday gardeners and DIY enthusiasts can enjoy their favourite pastimes while preserving nature.

IMPACTS

Sanitary risks

Volatile organic compounds (VOCs) are released by numerous solvent-based products such as paints, varnishes and adhesives. Certain materials used in construction, decoration and furniture manufacturing give off VOCs too. They are also used to clean brushes and rollers. While the products that contain them give off a strong smell, the VOCs themselves are often odourless. Meanwhile their toxic emanations persist for months, even years. A serious health risk, VOCs cause irritations, allergies, asthma, neurological damage and even cancer, as do certain gardening products.

www.epa.gov/iaq/voc.html
www.healthhouse.org/iaq/default.asp
www.ace.mmu.ac.uk/eae/Air_Quality/Older/VOCs.html

Tropical deforestation

Used equally for hardwood floors, in construction and to manufacture furniture, more and more teak, mahogany and rosewood are finding their way into DIY stores. These inexpensive tropical woods are the object of uncontrolled logging. Subjected to industrial production imperatives, which often fail to respect the forest's natural riches or legislation, their numbers are dwindling at an alarming rate. Each year, 14.2 million hectares of tropical forest disappear –the equivalent of all France's forestland– depriving indigenous populations and native fauna of vital resources.

www.fao.org/DOCREP/ARTICLE/WFC/XII/MS12A-E.htm

Water pollution

People frequently use fertilizers, pesticides and herbicides on their garden or vegetable patch. Through leaching and runoff, phosphates and nitrates from agriculture and domestic gardening become concentrated in water bodies, creating the conditions for eutrophication. The subsequent proliferation of algae asphyxiates the milieu and deprives other species of oxygen.

www.epa.gov/maia/html/eutroph.html

Uniform species

In western countries, private gardens are often bordered by hedges. Despite the multitude of possibilities, a dozen or so hedge species prevail. They are chosen because they offer privacy, shelter from the wind, require minimal care and attention, and stay green all year round. These uniform plantations can deplete the soil of nutrients and disturb local fauna. This lack of diversity is repeated in the garden itself, with the same few species of flowers, trees and shrubs being grown from one to the next. Such standardization is the work of landscape designers and nurseries, which stock too few local species. Instead they sell invasive exotic plants that are often unsuited to the climate in much the same way as lawns are unsuited to hot, dry regions.

A POPULAR WAY TO GET RID OF GARDEN RUBBISH, GRASS AND BULKY WASTE, BONFIRES CONTRIBUTE TO AIR POLLUTION.

→ **1/4**

of surface and groundwater pollution comes from amateur gardening

CHILDREN WHO ARE EXPOSED TO PESTICIDES ARE 6 TIMES MORE LIKELY TO CONTRACT LEUKAEMIA.

→ **50%**

of exploitation of tropical forests is illegal

↓ Importing exotic plants can disturb the local ecosystem by introducing invasive insects.

PESTICIDES

Products containing biocides will destroy weeds, parasites and diseases for an impeccable garden. Some will also kill birds, hedgehogs, bees, ladybirds, butterflies and other non-target species. Meanwhile, undesirable insects are becoming increasingly resistant to pesticides.

www.ffdp.ca/hww2.asp?cid=4&id=230

↓ "Dangerous", "corrosive", "irritant" and "inflammable" are adjectives that describe the majority of DIY products. Taking precautions when handling them will help prevent poisoning and accidents among both users and children.

ON THE RIGHT TRACK

→ Family allotments

Plots of land developed by associations, social housing projects or local authorities, allotments and community gardens are found near housing developments or on the outskirts of cities for residents to use and enjoy. Vegetables account for most of what they grow there. Urban policymakers at every level now acknowledge the role of allotments in reinforcing the social fabric. First in line for these gardens are large families and the very poor. They rekindle community spirit and neighbourliness, create green areas in the city, and ease social tensions.

mindspring.com /~communitygardens
www.cityfarmer.org/erin.html
www.farmgarden.org.uk/ari/arilinks.html

HOE MORE = WATER LESS.
HOEING ENABLES WATER TO BETTER PENETRATE THE SOIL AND MAINTAIN HUMIDITY LEVELS IN THE GROUND.

→ The FSC label (Forest Stewardship Council)

Naturally ecological, wood is an essential material when building and furnishing houses. However, it is only renewable when responsible forest management preserves biological diversity and the forest's capacity to regenerate itself. To prevent resources from being plundered, FSC certification guarantees economically viable forest management that respects the environment and the rights of local populations. Worldwide almost 40 million hectares in some sixty countries have been granted certification. For example, all Britain's public forests are FSC-certified. The FSC label can be found on a variety of products including furniture, paper and charcoal.

www.fsc.org

→ Recycling in developing countries

In Africa as in all developing countries, there is no limit to the inventiveness shown in recovering and reusing materials. Countless decorative and useful objects (toy cars, briefcases, ashtrays) and furniture (tables, stools, CD racks) are crafted out of metal recovered from tins, drink cans and aerosols. Equally resourceful are mats woven from plastic bags and chairs made out of barrels. As more and more people in the North are seduced by these creations, handcrafting from recycled materials is growing into a full-fledged business.

www-sul.stanford.edu/depts/ssrg/africa/art.html

AT UNEP

→ UNEP AND THE BASEL CONVENTION

The Basel Convention was adopted in 1989 by the international community and ratified by 145 member states of the United Nations, and by the European Union. The purpose of this world agreement is to provide a solution to the problem of hazardous waste disposal. In particular it aims to regulate the movement of almost 4 million tonnes of toxic waste that move across international frontiers each year, and which include pesticides. The Secretariat of the Convention, administered by UNEP, is tasked with implementing the convention and the agreements made under it. The promotion of less toxic products and sustainable alternatives, supporting projects to eliminate stocks of pesticides and information campaigns are among its main actions.

www.basel.int

SOME LABELS

European Eco-label

Created in 1993 by the ministers of the environment in the European Union countries, the European Eco-label, symbolized by a flower, is awarded to products that are not detrimental to the environment during their lifecycle, from the extraction of raw materials to elimination of waste. It can be found on numerous consumer goods such as paper, textiles, detergents and paints throughout the European Union.

http://europa.eu.int/comm/environment/ecolabel/pdf/infokit/diy_en.pdf

Some national eco-labels certify products that have a reduced environmental impact during their lifecycle and whose effectiveness is at least equivalent to that of similar products. Examples include:

→ Der Blaue Engel, set up in 1977 by the German federal ministry of the interior and the ministry of the environment: **www.blauer-engel.de**

→ NF-Environnement, the French eco-label created in 1991 and awarded by the national organization for standardization: **www.afnor.fr**

→ Environmental Choice, introduced by the New Zealand government in 1990: **www.enviro-choice.org.nz**

→ The Thai Green Label Scheme, created in 1994 by the Thailand Environment Institute in conjunction with the ministry of industry: **www.tei.or.th/bep/GL_home.htm**

PUTTING IDEAS INTO PRACTICE

Gardening

→ REPLACE CHEMICAL PRODUCTS WITH NATURAL ALTERNATIVES → PREFER HOME-MADE COMPOST (SEE WEBSITES) → BUY FROM SPECIALIST RETAILERS WHO ARE MORE LIKELY TO GIVE RELIABLE ADVICE → PREFER CERTIFIED PRODUCTS THAT ARE COMPATIBLE WITH ORGANIC GARDENING → READ LABELS CAREFULLY AND FOLLOW RECOMMENDATIONS (DOSAGE PER SQUARE METRE OF GARDEN, INSTRUCTIONS FOR USE, ETC.) → WATER ECONOMICALLY AND EFFICIENTLY WITH THE WEATHER: SAVE RAINWATER AND IN SUMMER LET THE GARDEN COOL OFF BEFORE WATERING (NEVER WATER IN THE SUN) → CHOOSE DIFFERENT LOCAL PLANT SPECIES FOR THE GARDEN AND FOR HEDGES → PUT NESTING BOXES IN TREES

Diy

→ BUY ECOLOGICALLY-CERTIFIED PRODUCTS → USE WATER-BASED PAINTS → NEVER POUR LEFTOVER PRODUCTS DOWN THE DRAIN: TAKE THEM TO WASTE-COLLECTION SITES ALONG WITH THE EMPTY CONTAINERS → AVOID SYNTHETIC CARPETS AND INSULATION MATERIALS → PREFER NATURAL FIBRES SUCH AS SISAL, COIR AND HEMP → CHECK THE ORIGIN OF WOOD AND CHOOSE LOCAL SPECIES → RECYCLE AND REPAIR → GIVE NEW LIFE TO FLEA-MARKET FURNITURE

Companies and local authorities

→ SET ASIDE LAND FOR ALLOTMENTS AND COMMUNITY GARDENS → CHOOSE PRODUCTS CAREFULLY AND MONITOR THE AMOUNT USED → PLANT NATIVE TREES THAT ARE SUITED TO THE CLIMATE → INSTALL AN EFFICIENT WATERING SYSTEM

FIND OUT MORE

Organic gardening tips:
www.basic-info-4-organic-fertilizers.com/gardeningtips.html
www.organicgarden.org.uk
www.cityfarmer.org
www.goforgreen.ca/gardening/Factsheets/Fact2.htm
www.epa.gov/owm/water-efficiency/final_final.pdf
DIY ideas:
www.diynet.com