ENVĪRONMENT & ECOLOGY

Teacher's Manual &
Educational Material
Strengthen Creative Cooperation

CONTENT

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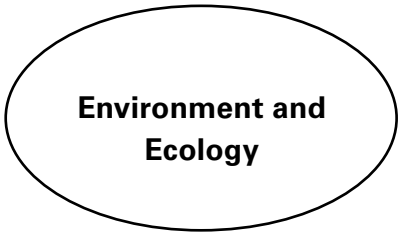
Introductory Activity: Brainstorming

Form groups of 3-4 members each and think of your associations with the terms „Environment“ and „Ecology“. Compare your outcomes with the other groups and note the most common expressions on your board.
What are the main issues? Which aspects did not occur that often? Possible reasons for that?



TERMĪNOLOGY

As you may have noticed in the course of the brainstorming, both terms, environment and ecology are fairly broad with regard to their definitions. Environment, for example, can refer to the surroundings, while it may also be used for social settings.
Within the last couple of decades, the term environment has become closely associated with human influence on nature. While ecology originally referred to a field of biology, which focuses on the relation between creatures, it is nowadays also frequently used when referring to human influence on nature in connection with sustainability and climate change.

ENVIRONMENT, ECOLOGY & POLITICS

Within the last couple of decades, the fields of environment and ecology have largely gained consideration within society and politics. When the Club of Rome published its study on "The Limits to Growth" in 1972, the issue of environmental concerns achieved international attention for the first time. The resume of the study was that – with a rise in population, continuing industrialization and exploitation of resources, the absolute growth limit of the earth would be reached by the 21st century. As a result, the report called for a sustainable use of resources and measurements to decelerate the rapid population growth.

In the 1990ies, international political attention was once again brought to these crucial issues. In 1992, the **UN Earth Summit**, also known as the **United Nations Conference on Environment and Development (UNCED)**, took place in Rio de Janeiro/Brazil. In total, 27 guiding principles were adopted. Among them is the right of every individual to lead a healthy and productive life in harmony with nature, as well as the entitlement of states to the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies and to the necessity to develop by taking into accordance the developmental and environmental needs of present and future generations.

The **Kyoto Protocol** was adopted by the UN in 1997 and entered into force in 2005. It is an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its parties by setting internationally binding emission reduction targets. For the first time in history, binding limits for GHG emissions of industrial countries were defined. The protocol was ratified by 193 countries and the European Union. So far, no extension of the protocol could be achieved. The Kyoto protocol has never been ratified by the U.S., Canada opted out in 2011.

In 2000, the eight **Millennium Development Goals** were adopted. The so-called **MDGs** – which range from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015 – form a blueprint agreed to by all the world's countries and all the world's leading development institutions. Especially MDG No. 7, to "Ensure Environmental Sustainability", is relevant for the issues of environment and ecology.

Twenty years after the first Earth Summit in Rio, a further international conference of the UN took place in Rio de Janeiro: **Rio 20+**. The participating states agreed that after 2015, **Sustainable Development Goals**, based on the MDGs, ought to be brought forward. However, so far no clear aims could be agreed upon.

2013 was declared the **International Year of Water Cooperation** by UNESCO. The initiative of the UN aims at promoting the important issue of water cooperation, which is crucial to preserve water resources, ensure their sustainability and protect the environment. Education on the importance of water cooperation and international cooperation is to be enforced by this program.

Activity: Online Research

Do a research on the internet whether there are any human rights directly related to the issues of environment and ecology. Then discuss in groups of 3-4 students, whether human rights have any relevance with regard to the abovementioned protocols, aims and fundamental guidelines.

Questions to be discussed:
- Have the efforts been sufficient so far?
- Can the regulations be executed? If so, by whom?
- What happens if states/companies/individuals violate the rules?
- According to your opinion - What has been lacking in the attempts so far?

Links

Sustainable Development Goals:
www.stakeholderforum.org/fileadmin/files/Bond%20SDGs%20Paper%20May%202012.pdf
MDGs:
www.un.org/millenniumgoals/
UNESCO Year of Water Cooperation:
www.unwater.org/water-cooperation-2013/home/en/

ENERGY

Our everyday life is hard to imagine without energy. We need electricity for light, to prepare our meals, for our computers and TV sets. Also heating and the transport of goods and people requires a lot of energy. The ways in which energy is produced differ largely and have manifold effects on nature. Classic sources of energy are the burning of coal, wood, natural gasoline, mineral oil, as well as nuclear power. In addition, alternative means of generating power have been on the rise within the last couple of decades.

Activity: Online Research

Do a research on the Internet in order to find out how much energy a 3-4 people household needs on average per year and which sources of power are used. Try to find ecologically sustainable alternatives and write down pros and cons of the individual ways of producing power. Then collect all possible sources of energy on the board and discuss pros and cons in the class-forum.
Now imagine you are the mayor of a small town with 100 households, respectively a city with 10.000 households. What are the best sources of energy to cover the needs of all inhabitants? Take into consideration the geographic location of your village/town. Which kind of energy supply do you think would be best for your hometown? Name your reasons!

Links

www.guardian.co.uk/environment/renewableenergy
www.greenpeace.org/international/en/campaigns/climate-change/energyrevolution/
http://en.wikipedia.org/wiki/Renewable_energy

HEALTH AND NUTRITION

Sustainable Food

Besides energy, also health and nutrition/food are crucial issues in the discourse on environment and ecology. Our current food-system has harmful effects on nature due to long ways of transport, dispensable packaging, over-harvesting of the oceans, or deforestation to create farmland.
Within the last decades, a specialist degree program has been developed: Nutrition Ecology. In this field, relations within the food-system are subject of researches, i.e. the relation between food/nutrition and health, food/nutrition and environment, food/nutrition and society and food/nutrition and economy. Our health has been at stake due to the pesticides used in the production of food and the utilization of genetic engineering. Researches on social compatibility, for example focus on the unfair working conditions in developing countries. In order to offer a product at a dumping-price in industrial countries, often single areas of production are outsourced to developing countries. This results in long distances of transport.

By sticking with certain principles of sustainability with regard to our everyday consumption, we can help preventing more negative effects on the environment, health and society.

Some principles of sustainable food are:

Choose crop (plant) products!
Most people in Europe or the U.S. and other countries consume enormous amounts of foods of animal origin, such as meat, dairy products and eggs. Due to the high fat- percentage in meat the vast consume of meat products is the main reason for cardie-vascular diseases. CO2 emissions are much higher in livestock farming than in the production of fruit, vegetables and wholegrains. When producing beef, large amounts of crop are used to feed the animals. In order to obtain one kg of beef-meat, 10 kg of crop are needed. For one kg of poultry 2 kg of crop are needed.

Choose ecologically sustainable produced food!
The environmental pollution caused by organic agriculture is way less than in its conventional counterpart. Ecologically sustainable ways of production lead to less energy consumption and less CO2 emissions. The produced food contains less hazardous substances and offer larger biodiversity.

Choose seasonally available and regional products!
Be it strawberries, bananas, or tomatoes – we can almost find everything in the shelves of our supermarkets all around the year. Mainly, these out of season/region products derive from afar. Even during summer time, tomatoes are often imported by plane or trucks from Spain rather than from local farmers. This causes long distance transports or storage procedures which again cause high CO2 emissions that could easily be avoided. Buying seasonally available products means that we choose fresh fruit and vegetables which grow in our climate zones at the current season. "Regional products" refers to products that are planted and produced in the vicinity of where we purchase them.

Choose products which have undergone little or no processing – fresh and not extensively wrapped!
As there are numerous harmful side products that derive from food processing and as processed food usually has to be wrapped more elaborately, it is more sustainable to purchase fresh food, which is also good for the body. To keep a healthy diet, approximately half of the food consumed should be fresh.

Choose fair trade - certified products!
By purchasing fair trade-certified products we can contribute to fair wages for the producers. Especially in poor countries, producers often receive very low wages. However, "fair" does not automatically mean that the products are produced in an ecologically sustainable way.

Have delightful meals!
It is very important that you enjoy your meals. Take your time to eat and drink and make sure you only consume good products!

Activity: Biodiversity

What does an apple taste like?

Green, red, yellow – apples always look different. Also the taste differs largely from kind to kind. Bring different kinds of apples to class and test your taste buds! Which is the best one?

Name of the kind of apple:

Country of origin:

What does it taste like?

rather sweet ⟷ rather sour

What is the texture like?

rather hard, crunchy ⟷ rather floury

How juicy is the apple?

juicy ⟷ dry

What is your general impression?

tasty ⟷ not tasty, because...

Activity: Interview

Team up in pairs of one host and one guest student. Do interviews with each other regarding your eating habits. Answer the following questions and add your own ones!

- What is your favorite food?
- What do you eat on a regular basis?
- When and how often do you eat daily?
- Where and how do you consume your meals?
- Do you think you have a healthy diet?
- Do you mainly eat ecologically sustainable food?
- Do you eat seasonally available and locally grown food?
- Do you eat a lot of meat/ animal products?

Food Sovereignty

Food sovereignty means that people have the right to define their own food systems. Advocates of food sovereignty put the people who produce, distribute and consume food at the centre of decisions on food systems and policies, rather than the demands of markets and corporations that they believe have come to dominate the global food system.
In order to achieve food sovereignty, trade on a local scale and peasant farming have to be empowered. Due to shorter transport-distances ecological compatibility can be enforced.

Activity: YouTube Video & Online Research

Watch the following video on YouTube (approx. 4 mins):
www.youtube.com/watch?v=th4uT2coXhk

Do an online research on the EU's agricultural policy. Write down the main aspects and try to find out what the currently discussed reform options are. How would you improve the agricultural policy of the European Union? In groups of 3-4 students, make your own reform-plan. Line out which effects your reform will have on food-quality, the environment, and on people living in Europe and on people in other regions of the world.

Links

www.sustainweb.org/pdf/SFG_Kids.pdf
www.foodswapnetwork.com/what-is-a-food-swap/
www.nutritionecology.org/de/overview/nutrition.html
www.youtube.com/watch?v=th4uT2coXhk

Movie – Tip: We Feed the World

CLĪMATE

All through history, climate has never remained the same and has been subject to vast changes. This is manifested in the shifts of average temperatures and differing levels of precipitation. Ice ages occurred. Eruptions of volcanoes or meteorite impacts lead to a rise of temperature. Changes in temperature always result in the extinction of certain species, while at the same time new species develop. The most popular change in history with this regard so far has been the extinction of dinosaurs.
Currently, we are facing severe climate change. For the first time in history, this climate change has been caused by humans. What the long-term results will be is presently still not predictable.

Climate Change

What does climate change mean?
"Climate change" refers to measurable changes of temperature on earth. In the past, ice ages occurred in which the average temperature dropped. Rises of temperature occurred due to eruptions of volcanoes, for example.

What causes climate change?
Before sun-rays reach planet earth, they have to trespass the ozone layer. Once they reach the planet, they heat up the earth's surface and water expanse, where the rays become reflected. The ozone layer keeps only little of that solar radiation within the earth's atmosphere and thereby a constant average temperature is created. The ozone layer consists of gases. These gases make sure that part of the radiation remains within the atmosphere and that life is possible on the planet. Climate change may occur for example due to the eruption of volcanoes, deforestation, or greenhouse gas emission. These factors result in a rising density of the ozone layer, and less radiation can leave the earth's atmosphere.

What can be done to avoid climate change?
In the framework of annual climate conferences, the UN tries to establish binding limits for the emission of CO2 gases. However, the negotiations have not been successful so far. Especially European nations concentrate on the so-called "2° aim", which targets at limiting long-term global warming to a maximum of 2° Celsius. Technically, the limitation of greenhouse gases would not present a problem. However, the costs deriving from such technical changes and political inertia have so far lead to a relative standstill.
Nevertheless, we can contribute to the reduction of environmental destruction as individuals: By using energy efficient appliances, environmentally friendly modes of transport, shortening the food chain, or utilizing environmentally sustainable modes of heating/cooling, your individual level of CO2 emissions can be reduced to a large extent.

Activity: Regional Effects

Choose one of the following texts and find the relevant regions in your atlas. Using your atlas, try to figure out what the impacts of climate change may be on the environment, economy, and people living in the areas. Write down your results and compare the impacts on the different regions.

Are the Netherlands going to drown in the sea? (2009)

As half of the man-made country, the Netherlands, lies below sea level, global warming is a serious threat to all the people living in those regions. "Pretty scary. When the oceans rise with 1 meter, the Netherlands will sort of seize to exist."
Source: www.oddee.com/contrib_3229.aspx

Inuit become victims of Climate Change

On Banks Island in Canada's High Arctic, Inuvialuit hunters and trappers have a close relationship with the natural world. As they travel over the tundra or harvest fish from the sea, they notice even the smallest changes to their environment. Recently, the changes have been significant and worrying. The climate has become unpredictable; the landscape unfamiliar. Autumn freeze-up occurs up to a month later than usual and the spring thaw seems earlier every year. The multi-year sea-ice is smaller and now drifts far from the community in the summer, taking with it the seals upon which the community relies for food. In the winter the sea-ice is thin and broken, making travel dangerous for even the most experienced hunters. In the fall, storms have become frequent and severe, making boating difficult. Thunder and lightning have been seen for the first time.
Hot weather in the summer is melting the permafrost and causing large-scale slumping on the coastline and along the shores of inland lakes. The melting has already caused one inland lake to drain into the ocean, killing the freshwater fish. Around the town of Sachs Harbour, it is causing building foundations to shift.
New species of birds such as barn swallows and robins are arriving on the island. In the nearby waters, salmon have been caught for the first time. On the land, an influx of flies and mosquitoes are making life difficult for humans and animals.
Source: www.iisd.org/casl/projects/inuitobs.htm

Malawi Fears Hunger as Lake Chilwa Dries (2012)

Malawi's Lake Chilwa could dry up completely in 2013 or 2014, scientists warn. The prediction has created fears of hunger and economic ruin among the more than one million people in fishing and farming communities around the lake.
The drying of Lake Chilwa is a national food security concern. The basin is a rice growing area, and fish from the lake provide a source of nutritious protein to many rural Malawians.
Source: Charles Mkoka, http://ens-newswire.com/2012/08/24/malawi-fears-hunger-as-lake-chilwa-dries/

Adapt faster to changing climate, Europe warned (2013)

The effects of climate change will be so far-reaching across the continent that vineyards may have to plant new grape varieties, farmers may have to cultivate new crops and water suppliers look to technology such as desalination in order to cope with the probable effects of more extreme weather. Buildings and infrastructure such as transport, energy and communication networks will also have to be changed.
The warnings come in a report from the European Environment Agency, called Adaptation in Europe. The research found that half of the 32 member countries of the EEA still lack plans to adapt to the effects of global warming, although others have begun to take action.
Source: Fiona Harvey, http://www.guardian.co.uk/environment/2013/apr/29/adapt-changing-climate-europe-flooding

The Maldives Are Drowning

"It's gob smacking that in 2012 we're still debating the topic of global warming. The Maldives has lost over 5 meters of beachfront due to rising ocean levels, and an estimated 25 meters of water is waiting to spill over the land pending the melting of our ice caps. Of course the Maldives are just one of many coastal cities like Manhattan and Vancouver that will be completely decimated by rising ocean tides. Atlantis isn't just some fairy tale. It's our future. We'll be exploring underwater museums rather than art galleries and using bailing buckets to back peddle our way out of yet another apocalyptic variety show."
Rachel Gertz
Source: http://questioneverything.ca/features/the_maldives_are_drowning_the_island_president_trailer

In Sign of Warming, 1,600 Years of Ice in Andes Melted in 25 Years

Glacial ice in the Peruvian Andes that took at least 1,600 years to form has melted in just 25 years, scientists reported Thursday, the latest indication that the recent spike in global temperatures has thrown the natural world out of balance.
The evidence comes from a remarkable find at the margins of the Quelccaya ice cap in Peru, the world's largest tropical ice sheet. Rapid melting there in the modern era is uncovering plants that were locked in a deep freeze when the glacier advanced many thousands of years ago.
Source: Justin Gillis, www.nytimes.com/2013/04/05/world/americas/1600-years-of-ice-in-perus-andes-melted-in-25-years-scientists-say.html

Impact of temperature rise on robusta coffee in Uganda

In Uganda, the total area suitable for growing Robusta coffee would be dramatically reduced with a temperature increase of 2 centigrades. Only higher areas would remain, the rest would become too hot to grow coffee. This study shows the vulnerabilitty of developing countries, whose economies often rely heavily on one or two agricultural products.
Source: www.grida.no/publications/vg/climate/page/3090.aspx

Activity: Ecological Footprint

Do the test! - How big is your personal ecological footprint? www.myfootprint.org

ART AND CLĪMATE CHANGE

"Climate change does not only change the world. It also changes our view of the world."
(Vera Tollmann)

In order to effectively combat causes and effects of climate change, first and foremost, public attention is required. One of the opportunities to create a better understanding of environmental issues is offered by the works of many artists.

Cape Farewell, for example, is am platform that encourages artists to creatively deal with the issue of climate change. Among other activites, artists have been invited to take part in expeditions to arctic regions or the Andes, in order to experience the direct results of climate change. The artworks inspired by these experiences have been featured in exhibitions, films and other publications.

The last expedition to the Arctic took place in September 2010. Five scientists and 10 artists went on a trip for 22 days. Matt Clark, on of the participating artists realized an exhibition titled „High Arctic". His intention was to show the influence on humans on arctic regions and to reflect the vulnerability of the area. A short insight into his work can be gained here:
www.uva.co.uk/work/high-arctic
Furthermore, Cape Farewell offers teaching aids for climate change issues on its website:
www.capefarewell.com

Links

www.epa.gov/climatestudents
www.facebook.com/pages/RETHINK-Contemporary-Art-Climate-Change
www.philasculptors.org/globalwarming
www.ghostforest.org
www.ghostnets.com

RESOURCES

The term „resource“ may refer to tangible, as well as intangible goods. Tangible goods are water, energy, soil, food, but also cars, or housing. Intangible goods are, for example, education, health, or recognition. We rely on resources whenever we want to produce or do something. Natural resources, such as soil, water, air, diversity, are among the main foundations of human life. Nature and environment hold their own values: they offer services for individuals and the society. We need land and soil for crop-farming, for growing fruit and vegetable, as grazing land for cows, as land to build our housing on. There is still enough air and it is freely accessible to all. However, due to environmental pollution, of course also air pollution is rising. In many urban areas, SMOG has become a serious threat for the inhabitants. In Beijing, for example, fine-particle pollution is 16 times as high as in German cities. Every year, approximately 8.600 people die of direct effects of SMOG in the 4 largest Chinese cities. In many regions of the world, water supply is a major problem. Currently, 884 millions of people do not have sufficient access to clean drinking water. Caused by a continuous rise in the world's population and melting glaciers, it will become even harder to supply water for all.

Water

Without clean water, humans and nature can not exist. Water reproduces itself by a natural circle, it cultivates, cleans and allows us to survive. Water is indispensable as a basic supply and as a basis for a functioning eco-system. Clean drinking water, from its source to the tap or well, is essential for healthy life. Furthermore, sanitation, such as toilets or showers, is very important as well. Water also plays an important role in economy. Especiellly agriculture and energy strongly depend on water. In order to feed the growing world's population, the agricultural production would have to increase by approximately 70% by 2050. The energy requirements will rise at a rate of 40% by 2030.

In 1999, the 22nd of March has been proclaimed the International Day of Water. Ever since the initiative has aimed at informing the public on water as an elementary aspect of life, especially on that day but also throughout the entire year. 2013 has been declared the UN International Year of Water Cooperation. The objective of this International Year is to raise awareness, both on the potential for increased cooperation, and on the challenges facing water management in light of the increase in demand for water access, allocation and services.

In Juli 2010, the United Nations General Assembly explicitly recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights. Even though this resolution is not legally binding under international law, it has shifted attention to the important issue of fair and equal water distribution.

How big the challenge is, is reflected in the UN World Water Development Report 2012. Approx. 884 million people do not have secured access to clean drinking water, 2.6 billion people lack access to sanitation, such as toilets or latrines. Each day, an average of 5,000 children die due to preventable water and sanitation-related diseases, such as cholera or diahorrea. Each year, 3.5 million people die of the effects of bad water supplies. This equals 10.00 people each day!

The global water crises is not caused by lacking global resources, but rather reflects unequal distribution on planet earth. 85% of humanity live in the dry regions of the earth. However, according to the World Water Report, even in Europe 120 million peole are effected by water shortages. Every 5th European lives in an area effected by „water -stress“. Also in the U.S. vast regions regularly become victims of extreme draughts. Germany, however, belongs to the countries with most rainfall and water-resources, even though regional shortages may appear. Only one fourth of the reneweable amount of water is being used. The average consumption in Germany is approximately 123 litres per person per day. This is approx. the amount of one full bath-tub. In the U.S. the average water-consumption is 300 litres, while in India it is approximately 25. A newborn in the global North consumes 40 – 70 times more water than a baby in the South.

Links:

www.unesco.org/new/en/natural-sciences/environment/water/wwap/
www.un.org/en/sustainablefuture/water.shtml

Activity: From Source to Tap – Where does your Water come from?

Water often takes a long voyage from source to tap. Some of the Viennese water supply, for example, comes from a mountain range called Schneeberg, in the South of Vienna. In May 2012, kulturen in bewegung/VIDC, who is a project partner in the EU-project "Strengthen Creative Cooperation", organized a 4 days hike from the sources into the city. Along the way, stations with cultural performances, scientific inputs, etc. linked the local realities of the participants to the global water situation.

Find out where your household's water supply comes from. Organize a hike along your water line with stations that put the local situation into an international context.

Theatre of Relevance

“H2O = Water“ Water is culture
it helps us to grow
Water is power
Let us save it, everywhere!

ETF is a youth theatre group from Mumbai/India who will be touring Europe as part of the “Strengthen Creative Cooperation” project in fall 2013. Their technique is the self-developed so-called “Theatre of Relevance”, in which they mainly try to raise awareness against child-labor and for gender equality. By dramaturgically working on issues the children in the group have experienced, such as child-labor or inequality, the participants are encouraged to influence their destinies. At the same time, the audience’s attention is drawn to theses issues and people are encouraged to take measures against the exploitation of children. The theatre group has been founded in 1992 and has so far staged more than 50 different plays, from traditional to contemporary performances.

The current play of the group, which they will also present on their tour through Europe, is titled “H2O = Water“. With 7 young actors, Manjul Bhardwaj works on the issue of water and aims at raising the awareness of the audience for the importance and current challenges related to the precious good. The scenes are staged as street-theatre and have already been shown in Mumbai. Besides public performances, the group also offers workshops, in which students can compare their attitudes with their peers.

Link

http://strengthen-creative-cooperation.net/

Activity: What are the Water-Problems of your Region?

Form groups of local students and exchange students and think of the problems that occur related to the issue of water and sanitation in your home regions. Try to answer the following questions:

- Is tap water drinkable?
- Is there enough water?
- Where does household water come from?
- What do you use water for on a daily basis?
- How much water do you approximately use every day?
- Find Mumbai in your atlas and try to figure out what water-problems may occur there. You may also research online.
- Interview your guest students.

Links:

www.wasser-weg.at (German website)
www.etfindia.org
www.youtube.com/watch?v=QFi5xj1Nh00
www.youtube.com/watch?v=cC8-eER51Mk
www.youtube.com/watch?v=4G-4eJiqn7s
www.youtube.com/watch?v=VC5XAzeEV8c
www.youtube.com/watch?v=dCPL6r5bCyA
www.kinderkulturkarawane.de/en/index.htm

CONSUMPTION

Sustainable Consumption

Nowadays, the form of society we live in is referred to as "consumer society". Thereby, we critisize the fact that life centers around consume-oriented issues. Cars have become status-symbols and fashion defines personality. From an economic point of view, consume is crucial in a market-economy, in order to keep up the economic development of a country. The more is being consumed, the more has to be/can be produced. As a result, more people can be employed. The state can earn more income through taxes, which then can be redistributed or saved for economically harder times. As superfluous consumption normally harms the environment to a great extent, and we are surrounded by a continuously growing amount of products and shopping-options, it is important to practice "conscious consumption". Many products offer a wide range of choice: If we want to buy a pair of Jeans, the options are sheer endless – manifold stores offer a large variety of brands, styles, etc. that we can chose from. Sometimes it should be cheap, sometimes we want a certain brand, or exactly that model that we have seen in a commercial. In general, we over-consume. Day by day we are confronted with offers, that animate us to buy more and more stuff. More that we can actually consume. For many people "shopping" has become a way to spend one's spare time. It has become rare that people just purchase what they actually need. This leads to a surplus of – for example – food, which then is dumped. Access garbage is produced, soil is being over- fertilized and forests are cut down. Local growing areas are often not sufficient for production. Austria, for example, needs in addition to its own agricultural areas, 13.000 square-kilometers to meet the national demands. Soil and land are not only needed for food-production. Lisa Kernegger, ecologist of the environmental organization Global2000, explains: "For the production of one cup of coffee, 4,3 square-meters of land are needed. For the production of a notebook, 10 square-meters of land are needed." If we look at the entire demand of food and consume-goods in Europe, approximately 120 million hectare of agricultural land outside the European Union is needed. In order to cater for the rising land-requirements of industrialized nations, so-called land-grabbing is practiced. National elites or governments steal land from the local population – and at the same time their basis for life – in order to rent it out or sell it to other countries or multi-national companies. Europe largely depends on the import of products from other countries, especially those produced in China, or India. These countries export the majority of goods that are locally produced and therefore often do not have enough resources for the local population.

Activity: Consume-Notes: What is good to share?

Does everything has to be bought brand-new? With the following questionnaire, try to find out which objects are better shared, lent or passed on.

1. What would you actually need at the moment, or what are you planning to purchase in the near future? (clothes, mobile phone, computer, soccer-shoes?)

2. Which way would you normally chose to get those items?

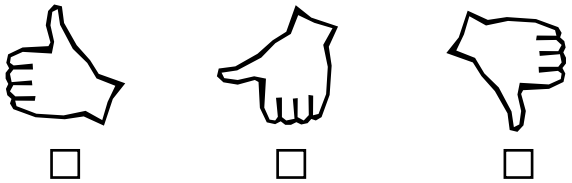
3. What will be the approximate costs, if you buy a new product?

4. What do you know about the ways of production of these products? Which resources are needed? Where is the product manufactured? Under what conditions? Does the production harm the environment?

5. How often will you use this product?

6. What will happen to the product once you won't need it anymore? Is it recyclable?

7. Check your answers – How would you now decide? Give your thumbs up or thumbs down for the purchase of a brand-new product:



Now form groups of 3 – 4 students. Compare your results. Try to find out, what the term "share – economy" may stand for and discuss pros and cons. What products offer good alternatives to buying new ones? Try to establish a share-economy model in your class. Think of how to organize that.

Final Activity: Climate- quiz – What have you learned?

www.ecokids.ca/pub/eco_info/topics/climate/quiz/index.cfm
http://www.geography4kids.com/extras/quiz_climateintro/
http://environment.nationalgeographic.com/environment/freshwater/freshwater-quiz-climate-change/

Further Links, Educational Materials

Water
www.unwater.org/fileadmin/user_upload/watercooperation2013/Campaigm_mtrl/watercycle-kids-english.pdf
www.unwater.org/fileadmin/user_upload/watercooperation2013/doc/USGS_FAO_WaterCycle.jpg

Energy
www.kids.esdb.bg/newenergy.html
www.alliantenergykids.com/EnergyandTheEnvironment/RenewableEnergy/index.htm

Sustainable Consumption
www.perlprojects.org/Project-sites/PERL/Responsible-living/Education-for-sustainable-consumption/Here-and-Now!-Education-for-Sustainable-Consumption

Books
Commodities, Governance and Economic Devlopment under Globalization, by Machiko Nissanke and George Mavrotas