

# KNOW YOUR LIFESTYLE

2

INTRODUCING SUSTAINABLE CONSUMPTION IN SECOND CHANCE EDUCATION

»»» **WATER AS A GLOBAL GOOD**



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Umwelt, Wasser und Naturschutz

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projekte

  
BAOBAB  
GLOBALES LERNEN

# IMPRESSUM

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# I. INTRODUCTION

In the age of globalisation, the world is moving closer together. And the buzzword globalisation does not only adhere to the boundless flow of information and capital but also the merging of cultures and a joint responsibility for the future. At the latest with the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 it became clear that dwindling resources, growing environmental problems and increasing social inequalities affect the entire world and therefore all governments and societies are encouraged to bear responsibility for a viable and sustainable development.

Therefore, as well the governments of the European Union committed themselves to the basic dimensions of global sustainable development recognised in Rio de Janeiro: environmental and resource conservation, social sustainability and

economic viability. Therewith, the governments acknowledge that their societies are in a learning process in which antiquated patterns of thought regarding development and underdevelopment are losing their validity and education for sustainable development must be given a more significant value. The universal responsibility of people worldwide for a socially and environmentally friendly behaviour requires a deeper understanding of the relationships between consumption patterns and the finiteness of resources, as well as an understanding of the links between consumption patterns in the countries of the northern hemisphere and the living and working conditions of people in the countries of the southern hemisphere.

## GLOBAL LEARNING

Global Learning is a possible pedagogic answer to issues of global development and questions of the future. It is an educational response that is based on the principle of sustainable development and internationally binding human rights treaties.

In this interdisciplinary approach the understanding of global economic, political, social and environmental contexts is considered as a cross-cutting issue of education - an educational concept that touches all topics.

The purpose of Global Learning is to increase the understanding of the problems of the modern world and its consequences, both locally and globally. Global Learning encourages learners for a change of perspective and a reflection of their individual patterns of thought and behaviour. Such learning is important because it helps people to recognise their own role and the individual and collective responsibility they have as active members of a global society in regards to efforts for social and economic justice for all and the protection and restoration of ecosystems on our planet.

Global Learning is not a strict and regulated educational programme, but rather an open, preliminary and multi-faceted

approach of contemporary general education. Global Learning should be fun. It uses a variety of interactive and participatory learning methods.

Didactically and methodologically Global Learning requires teaching and learning methods which are interdisciplinary, participatory and action- and experience-oriented, because Global Learning is both promoting cognitive as well as social and practical competencies. Thus, Global Learning does not target a particular field of knowledge, but aims at acquiring key competences and skills that people - today and in the future - need to live in a responsible, solidary and sustainable manner as world citizens ("think global – act local").

"Recognising, Evaluating and Acting" and the respective interplay of these spheres of competence are promoted. Thereby, reference is made to the living environment of the learners: Even if always one has to be careful dealing with the question of one's own realistic capabilities and actual individual power, learners shall be enabled to analyse their own position in society, to form their own opinion and to actively participate in political processes.

# SUSTAINABLE CONSUMPTION

Globalisation can be found everywhere in our day-to-day lives, starting with our shirt from Bangladesh, the cup of coffee brewed with beans from Guatemala right up to our mobile phone which would not function without coltan from the Republic of Congo.

Shopping knows no closing time, because via internet we can always purchase. Consumption imparts experience. Consumption socialises, gives meaning to our life and shapes our modern lifestyle.

Consumerism is an expression of societal development and individualism. Consumption sometimes appears as natural as eating, drinking, being mobile or working.

The media and advertising affect our consumption behaviour: products, music or outfits represent a certain style. The "proper attitude to life" and the "right perception" is organised by third parties on the market: via buying the "right products". Often, social recognition and an improvement of personal status are connected to it. Thus, in the end we all buy even things we actually do not need.

In view of a constantly growing world population and limited resources on our planet, however, the question arises how in future the needs of according to estimations by the United Nations more than 9,5 billion people in the year 2050 will be met and how participation of all people in the world can be assured. Solely the consumption of households in Europe is responsible for more than a quarter of all European greenhouse gas emissions. In this share the emissions connected to the production process of the consumer goods is not even included.

This means: the consumption of products increasingly influences both the economic and social situation of the people worldwide and the state of the environment. In the production process, in the consumption and in the use of a product lays great potential for minimising the environmental impact and for reducing global injustice. The point is to recognise and to use this potential, to hold a discussion about our lifestyles and about our responsibilities also in terms of consumption.

Of course there is the principle of "stop buying" or Consumption Renunciation. This principle focusses on the

consideration whether you really need a new product or repair an old one, whether you buy a used product or make a new product by upcycling an old one.

Contrary to that, there is the concept of Sustainable Consumption (also ecological or ethical consumption). Sustainable Consumption is part of a sustainable lifestyle and a consumer behaviour itself: Buying ecologically and socially responsible products may exercise political influence on global problems. It may reduce the economic, the ecological and the social costs of our lifestyle.

A prominent example of the global dimension of purchase decisions are efforts to fair trade. Consumers should choose a more expensive good of a small producer in a developing country, thus supporting fair working conditions. As well, with a purchase decision the operating and follow-up costs of a product should be considered and decisive. This applies also to the subsequent power efficiency as well as for the reparability or the long-life cycle of a product.

Following the principle of sustainable development, consumption is sustainable if it meets the needs of the present generations without jeopardising the prospects of future generations. Sustainable consumption therefore reaches into our individual lifestyle. The sustainable consumer is the ecologically and socially responsible citizen. Sustainable consumption first of all means conscious consumption: to have a closer look and to keep in mind one's personal "overall balance". Sustainability as a quality characteristic of products should be the guiding principle for consumers as well as for the economy and the public sector in Europe.

But how can we prepare and accompany especially young people on their way into a globalised and "connected" world in terms of viable and sustainable development? How can we convey to them the knowledge about local and global developments and challenges? How can we make them aware of sustainable options for action?

The project "Know your Lifestyle – Introducing Sustainable Consumption in Second Chance Education" would like to offer particularly young adults the opportunity to have a look beyond the horizon of their own lifestyles.

## II. THE PROJECT „KNOW YOUR LIFESTYLE“

The idea for the project "Know your Lifestyle - Introducing Sustainable Consumption in Second Chance Education" was based on the fact that development education and issues of globalisation and sustainability are practically not subject of the curricula of Second Chance-education in Europe.

In cooperation with Second Chance-teachers and non-governmental organisations (NGOs) engaged in development education, the didactic materials and workshop modules in this publication on different topics of sustainable consumption such as "Renewable Energies", "Mobile Phones", "Water as a Global Good", "Global Good Production in the Textile Industry" and "Human Energy" have been compiled and developed to fill this gap.

Therefore, working meetings with teachers were organised. First teaching concepts and ideas were presented to the teachers to obtain constructive feedback and detailed information regarding the characteristics of the target group and the organisational framework of Second Chance-programmes. At a later stage, in all project countries first teacher workshops were implemented to train an extended number of teachers in the use of the materials. By means of such events the participants were enabled to work with the preliminary materials themselves, to test these and already to work on the basis of the proposed topics of development education on globalisation contexts in their courses. This way, in all project countries already a certain number of project events in Second Chance-programmes could be implemented in the course of which it was possible to obtain feedback directly from the young adults enrolled in the programmes as the final target group. It was important for us to find out whether the materials were applicable in the courses and appropriate for the target audience, whether interest on part of the participants in the topics could be sparked and whether the participants enjoyed the events and the chosen methodology. According to this experience gained, the materials could again be revised and optimised.

The aim of the project is to inform young adults

like the participants in Second Chance-programmes about the linkages between personal, local consumption and the global impact connected to it. It provides young adults the opportunity to look critically at individual consumption patterns and to develop alternative and more sustainable patterns of action.

The participants of Second Chance-programmes in Europe are rarely confronted with development issues in their daily lives. They are a special target group with particular learning needs: Most of them are young adults with a migration and/or difficult social background who may often experience merely little support for a sound education by their families. But with their upcoming entrance into working life they are in an important phase of their life. In the Second Chance-programmes they engage in order to improve their chances for their future. With the elaboration of the educational materials at hand we attempted to develop an innovative pedagogical approach for discussing the topic of sustainable consumption and issues of globalisation with participants in Second Chance-programmes. Of course, we hope that the materials will as well appeal to other actors engaged in various fields of education and that also other target groups will be able to work with them.

We are not claiming that the people participating in such events will be educated for becoming entirely informed and enlightened consumers. The events are designed to give participants an impetus for becoming aware of the topic of sustainability, of global connections and of the question of global justice, to put them in an informed position in case they should be in their future everyday lives be again confronted with the issue, and possibly to enable them to act consciously and sustainably in one or another future situation. All this without raising the admonishing trigger finger and appealing to their individual "guilty conscience". Awareness of sustainable consumption is a challenge, almost a science in itself in the face of the bulk of information and the complexity today's life is providing us with,

# THE PROJECT CONSORTIUM:

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DVV International is the Institute for International Cooperation of the Deutscher Volkshochschul-Verband e.V. (DVV), the German Adult Education Association. The association represents the interests of the approximately 930 Adult Education centres (Volkshochschulen) and their associations, the largest further education providers in Germany.

DVV International provides worldwide support for the establishment and development of sustainable structures for Youth and Adult Education. As the leading professional organisation in the field of Adult Education and development cooperation, DVV International has committed itself to supporting Lifelong Learning for more than 45 years. DVV International finances its work with funds from institutional and private donors.

### Our Mission

Education is a Human Right. We fight poverty through education and support development. As a globally acting professional organisation for Adult Education and development cooperation, we build sustainable systems for further education along with citizens, educational organisations and governments. Together with the people in our partner countries, we establish places for Lifelong Learning.

The essential focus of our work:

- Literacy Education, Basic Education and Vocational Training
- Global Learning, Environmental Education and Sustainable Development
- Migration and Integration, Refugee Work, Health Education, Conflict Prevention and Democracy Education

### Local Support

We conduct educational projects for disadvantaged youth and adults, help in the set-up of educational institutions and advise partners and governments in the establishment and development of sustainable structures for Youth and Adult Education.

We cooperate with more than 200 civil society, government and academic partners in more than 35 African, Asian, Latin American and European countries. Our country and regional offices build local and regional cooperation and ensure the quality and effectiveness of our action.

### Global Partnerships

Generally, vocational, cultural and scientific education of youth and adults is a key to development worldwide. Along with national, regional and global Adult Education associations, DVV International promotes lobby work and advocacy for the Human Right to Education and Lifelong Learning. Thereby we orient ourselves on the UN Millennium Development Goals (MDG), the global Education for All (EFA) programme and the UNESCO World Conferences on Adult Education (CONFINTEA).

DVV is a member of the European Association for the Education of Adults (EAEA), the International Council for Adult Education (ICAE) and the German Commission for UNESCO (DUK).

# DIE KÄRNTNER VOLKSHOCHSCHULEN

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The Association of Adult Education Centres in Carinthia (VHSKTN) is a non-profit association with eight AECs in Klagenfurt, Villach, Spittal, Wolfsberg, Feldkirchen, St. Veit and Völkermarkt. The VHSKTN was founded nearly 60 years ago. As a traditional Volkshochschule the VHSKTN is also a member of the Association of Austrian Adult Education Centres. The Association of the Adult Education Centres in Carinthia regards itself as educational institution and is pledged to democracy, committed to the principles of human rights and independent of any political parties. For this reason the VHSKTN is opposed to any sort of anti-democratic, racist, anti-Semitic, misogynous behaviour or which discriminates against any group of people, and it is committed to counteract such tendencies.

According to the Association of Austrian Adult Education Centres the VHSKTN view education as a learning process which continues throughout life and comprehends the cognitive, affective and physical dimensions; in other words: the whole

person. Its work is focused on the learners' needs and requirements, but also tries to make people aware of needs and requirements they might forget about in everyday life. The trainer staff of the VHSKTN consists of more than 600 trainers, who conduct more than 2500 classes every year all over Carinthia. The head of the VHSKTN is Dr. Gerwin Müller. The pedagogical director is Beate Gfrerer. Beyond traditional classes and courses around the topics culture and society, nature and environment, economy and IT, languages, creativity and culinary art and beauty and wellness the AEC association runs more than 25 local and international projects. The key aspect of most of these projects is Second Chance, beginning from the basic educational courses, the certificate of Secondary Education and University entrance examination. The Association of the Adult Education Centres in Carinthia offers a chance for those, who fall through the cracks of society and supports people from all social classes in climbing the social ladder.

die kärntner  
  
**volkshochschulen**  
projekte

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The Slovenian institute for Adult Education (SIAE) is the main national institution for research and development, quality and education, guidance and validation, and promotional and informative activities in the field of adult education. SIAE drafts professional bases and evaluations, and monitors the development of the adult education system, develops various non-formal and formal forms of learning, develops programmes to improve adult literacy, and pays particular attention to improving access by vulnerable groups of adults to education and learning. In doing so, it develops the necessary infrastructure to support learning, develops models for the self-evaluation of quality and the validation of prior learning, and provides professional education and training for adult educators. The SIAE informs professionals and the general public

about all of these processes and achievements, and contributes to the broader awareness of the importance and role of adult education.

SIAE's mission in detail:  
We believe education could help people in exploring their life-long question i.e. "How should I live my life?" In this way the voice of the learner needs to be heard in the curriculum. On the other hand person could not be realised out of the community. Even more - every person tends to be realised in the community. Education shall bridges those two sides of human life. The word community is derived from the Latin word "communicare" "that means to communicate, to share. Communication means sharing - not only the material things, but also



Andragoški center Republike Slovenije  
Slovenian Institute for Adult Education

knowledge, spiritual things, values, problems etc. People need to communicate. The problems they share, even the conflicts might be understood constructively when there is a place for dialogue, where human ideas, knowledge and competences, virtues and values might be exposed and discussed. Dialog means that people hear each other and try to understand each other. When people understand each other, they may be willed to construct common reality. Thus SIAE puts special attention to the community's learning, dialogue and to the personalization of learning. In this process our special concern is paid to adults who are in dangerous to be excluded from dialog e.g. low educated, young dropouts, migrants, unemployed, etc. Most of our work refers to non-formal learning that represents the major part in human lifelong learning.

SIAE and adult educators:

We are aware of the importance of competent staff in adult

education and thus we develop learning programs for adult educators (teachers, mentors, tutors, counsellors, advisers, etc.). They represent the cornerstone in the quality of learning process and thus important agents in changing society.

SIAE and the project "Know your Lifestyle": It hasn't been difficult for us to decide to cooperate in the project "Know your Lifestyle", because it grows from similar values and has very similar aims as we have already write above. The questions of sustainable consumption are very important in the global world. We believe we can help to spread the principle of sustainable consumption in Slovenia. We have stepped in the project together with the network of PUM<sup>1</sup> mentors and Umanotera - the non-government organization who has already worked at this field for more than decade. We all learn together with other partners in the project. We communicate and share all the goods, knowledge and ideas in striving to disseminate them world widely.

# ESTONIAN NON-FORMAL ADULT EDUCATION ASSOCIATION

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The Estonian Non-formal Adult Education Association (ENAEA) is non-governmental, national umbrella organisation in the non-formal adult education field associating education-orientated NGOs and folk high schools. ENAEA has 72 member organisations.

Our values:

- Life-long learning and every person's active participation in his/her own community's as well as in the state's life as a whole is a necessary precondition and resource for development;

- Learning plays a key role in softening poverty, inequality and social stratification, but also in supporting democracy, creativity and economical development.

According to the ENAEA's standpoint, the life-long learning in Estonia has to guarantee taking into account the learners' needs and participants' active involving in study process and assure the accessibility of learning possibilities to all applicants.

ENAEA is active in adult education policy; supports activity of its members, promote their mutual relations; collects and publishes educational materials; collects and distributes information; carries out research projects; organizes seminars, courses, conferences etc.; cooperates with organizations having similar objectives in national and international level; cooperates with governmental institutions.

ENAEA has experience in different research and network projects: EQF, NQF, adult educators' profession and qualification issues (national and international level, incl. training of trainers), basic skills and vocational education, key competencies and non-formal education etc.

The competence areas are: adult education in local areas; NGO leader training; guidance and counselling in adult education; quality of adult education (incl. training of trainers); involving school dropouts (young adults) into adult learning activities.

<sup>1</sup>PUM ist eine slowenische Abkürzung für ein Programm des zweiten Bildungswegs, d. h. Projektlernen für junge Erwachsene, das bei SIAE in den 90-er Jahren entwickelt wurde, um jungen Ausbildungsabbrechern helfen, Bildung zu erwerben oder eine Arbeit zu finden. Heute gibt es 12 PUM-Gruppen in Slowenien.

# EUROPEAN ASSOCIATION FOR THE EDUCATION OF ADULTS

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EUROPEAN ASSOCIATION FOR  
THE EDUCATION OF ADULTS

The European Association for the Education of Adults (EAEA) is the voice of non-formal adult education in Europe. EAEA is a European NGO with 123 member organisations in 42 countries and represents more than 60 million learners Europe-wide.

EAEA is a European NGO whose purpose is to link and represent European organisations directly involved in adult learning. Originally known as the European Bureau of Adult Education, EAEA was founded in 1953 by representatives from a number of European countries.

EAEA promotes the social inclusion aspects of the EU 2020 strategy; it promotes adult learning and the widening of access and participation in formal and non-formal adult education for all, particularly for under-represented groups. We promote learner-centred approaches that take people's lives into account and enable them to acquire all kinds of competences, with particular attention to basic & transversal skills.

EAEA

- provides information & briefings on EU policy
- cooperates with EU institutions, national & regional governments, e.g. the Council of Europe & UNESCO
- cooperates with stakeholders, through EUCIS-LLL

- releases reports, handbooks, project information & results
- provides advice and recommendations for our members' policy work
- helps members with exchange of good practice, partner search & dissemination of projects & events

EAEA aims to support and disseminate their member's engagement in activities, partnerships, policy and curricula development, research and provision for social inclusion and cohesion, democratic participation and combating poverty and discrimination. Linked to an international network of adult education providers, EAEA is leading in mainstreaming innovative concepts in adult learning. EAEA regularly organises European conferences on topics relevant to Adult Education and LLL and links to other European platforms and umbrella initiatives on European level.

Furthermore, EAEA has a long expertise in dissemination activities and powerful dissemination channels: through its website, it reaches 350000 unique visitors in a year; its newsletters counts more than 2000 readers and its social media are followed by more than 800 people.

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BAOBAB – Globales Lernen is a non-profit organisation and a principal forum for Global Education in Austria. By providing teachers and educators with didactic material, we promote the involvement of global topics within and outside Austrian schools. With our work we want to raise awareness for global economic, social, ecological and political connections as well as show that they are man-made and therefore changeable. BAOBAB is located in Vienna and works in four different areas:

### Library

BAOBAB – Globales Lernen is part of the C3-Library for International Development. This library is the largest education and research library in Austria dedicated to international development, global education, and women and gender issues. The educational part of the library offers a wide range of didactic materials (books, DVDs, CDs, games) on global topics for different levels. These resources deal with questions of peace education, human rights education, environmental, political and development education as well as social and cross-cultural learning and diversity education. A special focus is laid on monolingual and multilingual children's books along with films and documentaries from all over the world.

### Films and Educational Material

BAOBAB – Globales Lernen develops educational material on global issues for all levels (kindergarten to adult education).

Our DVDs contain selected documentaries and short films from or about Africa, Asia, Latin America and Eastern Europe. They address global topics and provide insights into different living situations of people all around the world. In addition, the DVDs include didactic material and background information on each film.

### Training

BAOBAB – Globales Lernen offers training in Global Education for teachers and educators at various levels (kindergarten, schools, etc). The training is in step with the actual practice of educators and should facilitate the integration of Global Education into learning contexts.

### Consulting

BAOBAB – Globales Lernen supports teachers, educators and students in selecting material and in the execution of projects.

# III. INFORMATION ON THIS VOLUME

Based on the topic of consumption and production chains, the following module provides ideas and methods for dealing with global learning in everyday classes. The focus is put on the examination of the subject of water.

The materials deal with the access to and the significance of the resource of water. They shall raise awareness of the all-round function of water as a precious resource in our everyday life. After raising awareness of our individual direct and indirect water consumption, the concept of "virtual water" will be exemplified using the examples of various convenience goods. Finally we will pose the question if water is a human right or a commodity.

Hereby, the linking to the learners' personal lives is central. The materials comprise of various methods which allow for both an introduction to the topic of sustainability and an intensive examination of the various aspects connected to the topic of textile production. The students will take on different perspectives on the issues dealt with and will cogitate about possible alternative options for action. The methods allow for both a cognitive as well as a creative examination with the topic.

In each chapter teachers will find background information on the respective issues touched as well as a variety of methods which they may use together with their course participants.

This publication offers a variety of possible approaches:

It can be used both as a collection of methods relating to the topic of water out of which single methods may be selected depending on the lesson's subject, interest or time available and integrated into the regular lessons.

But this publication also provides teachers the opportunity to individually organise a special project day-event according to

the interests and ideas of the participants or according to one or another aspect of the topic dealt with (an optional schedule is presented in the following). Of course, the methods can also be linked with other topics, methods and activities which are not proposed here. The collection is an offer which leaves room for expansion and improvisation.

The methods are always described in such manner that an independent and easy implementation by the teachers should be possible. As already implemented events have shown, however, in some cases for a successful application and for having a joyful event a certain amount of improvisation on sides of the teachers is necessary and sometimes even intended.

Information on the materials respectively needed for implementation and on the amount of time required (the respective information concerning the time are meant as a guideline and may vary depending on the characteristics of the group) as well as instructions regarding the preparation, implementation and evaluation of an event is always listed. Copy templates and worksheets which are to be used are respectively provided. These may be copied out of this publication. Since the materials may be also found in the download section of our project website ([www.knowyourlifestyle.eu](http://www.knowyourlifestyle.eu)), the printing of single contents may ease the process of preparation.

We hope that all teachers and their course participants who jointly work with our materials will enjoy the examination with the issues proposed, that they will gain fascinating insights and ideas and that they will take a strengthened awareness of sustainability into their future lives.

## WATER

Water, one of the most valuable resources on earth, is getting scarcer. The main reason for this is the enormous increase in water demand, especially for the production of industrial goods and in agriculture. In an Austrian household, approximately 130 litres of drinking water are consumed per person per day. The actual consumption of water – if the production of food, clothing and other consumer goods like computers or mobile phones are added – is about 4.600 litres daily. The term „virtual water“ describes how much water is contained in a product or rather has been used for the manufacturing of a product. Countries short of water often grow and produce food which use up huge amounts of water but for which no compensation is available. Virtual water is not compensated for and the consumers don't pay for it. Water-rich countries however import water-intensive products from exactly these countries. Our tomatoes are grown with the help of irrigation systems in the dry south of Spain, some of the cotton for our clothing comes from Kasachstan, where the Aral-lake has

already lost 90 percent of its water due to the irrigation of cottonfields . With globalized goods production the utilization of water has more and more shifted to foreign countries. A large part of our water demand is actually met outside of Austria – often in water-poor regions of the world – via raw materials and food imports.

This leads to the next question. Is water a commodity or a human right? Against the background of different economic and social claims there are more and more conflicts of interest between protection and utilization of water.

# EXAMPLE: PROJECT DAYS ON THE TOPIC WATER

Necessary time: 5 hours (plus breaks)

time/minutes	title	activities	content	materials/ documents
35	Introduction			
05	Introduction		Presentation of the programme	
30	Water-related jobs	Game what's my job and discussion	Reflection on water and its functions	Sticky tape, textcards: jobs, poster and pens
70	Virtual water			
40	What is virtual water?	learn a definition through an example	Get to know the concept of virtual water	Worksheet virtual water, cards
30	How much water is in ...	Guessing game	Get to know how much water we use in our everyday life	textcards guessing game products, stopwatch
195	Water – human right			
50	Global water game	Alignment game	Facts and relations between population, income and access to water	Sheets of paper, chocolates for every PT (fair trade), Data card parameters for world game
145	Water : commodity or human right	Movie, discussion, role play	Get to know different perspectives on the topic	Masking tape, internet, LCD projector, speakers, role cards and infotext water in plastic bottles
10	Close			
10	That is what I take with me from this workshop	Flashlight round	Reflection of the day	

## >>> FIRST STEPS

Either of the following two activities can be used to introduce the topic "Water".

### >>> WATER-RELATED JOBS

The PT deal with the various functions and meanings of water.

Each PT receives a job card (see copy template) and considers briefly in two or three sentences, which role water plays for this person in his or her daily working life.

Then the PT sticks this card on somebody else's forehead. This other person must under no circumstances read the card.

When each person has a card stuck to their forehead, they walk through the room. Their aim is to find out what job is written on the card on their forehead. In order to do so they will ask another person questions about their job described on

 game "Job guessing", discussion

 20 min.

 adhesive stripsmasking tape, text cards: jobs (copy template), poster, pens

their forehead. However, their partner must only answer with „yes“ or „no“. Every person who has guessed his or her job, can remove the card.

When all PT have guessed their jobs, there is a discussion about the varied functions of water which have been brought up with the help of the different jobs: water as an essential resource for drinking, agriculture and sustenance, health and hygiene, cleaning, industry, energy, religion and leisure freetime. These terms are grouped around the term water on a poster.

## >>> WATER-WORLDS

The PT develop an awareness for the multitude of functions of water usage globally.

Conduct a brainstorming session around the topic water is carried out. The word "water" is written on the board, following that, all terms which are mentioned by the PT.

Possible helpful questions could be:

- What do you associate with water?
- Where do you come in contact with water?
- What do you use water for?

The aim for the PT is to become aware of the various functions and possibilities of water use. Water is an essential resource for drinking, agriculture and sustenance, health and hygiene,

 picture supported brainstorming

 50 min.

 various pictures of water, cards

cleaning, industry, energy, religion and leisure ..

To extend the activity, the PT can be asked to bring along pictures, which are in some way connected to water, e.g. a picture of a lake, swimming pool, water bottle etc. Alternatively magazines can be brought along by the trainer, in which the PT look for pictures.

The trainer additionally brings along important discussion generating pictures, which the PT probably had not considered. Below are a few suggestions regarding various topics:

Agriculture and sustenance: Pictures of children



## WATER RELATED JOBS

**FIREFIGHTER**

**FARMER**

**COKE-PRODUCER**

**SWIMMER**

**COOK**

**CAR PRODUCER**

**CONSERVATIONIST**

**WORKER IN A  
CLARIFICATION PLANT**

**FISHERMAN**

**PILGRIM IN INDIA**

**CLEANER**

**LIFE SAVER**

**PRIEST**

**ENVIRONMENTAL  
ENGINEER**

**SEWERAGE ENGINEER**

**FIGURE SKATER**

**FATHER**

**HOTELIER**

**HOSPITAL NURSE**

**FOOD CHEMIST**

**ENERGY CONSULTANT**

**MARINE BIOLOGIST**

**CAPTAIN**

**WATER ENGINEER**

eating; people drinking; foodstuffs; pictures of soup or food or cooking; industrial irrigation of fields; person who is watering a field; dried out field; people in front of a well with canisters; picture of a cow; picture of a child that is drinking from a tap;

- Health and hygiene: Adult or child that is washing with water from a bucket; child under the shower or at the basin; picture of a toilet; cleaning teeth; cleaning.
- Leisuretime: Swimming pool; splashing children; picture of a child with water hose; beach pictures; ice skating (in which form do we know water);
- Pollution: Sewage; polluted river; lake or sea; sewage treatment plant.
- Industry: Pictures of cars; T-Shirt; newspaper;

sewage.

- Energy: Hydro powerplant.
- Religion: Religious ceremonies in all religions (christening picture, washing of feet and hands before the mosque visit, picture of the Ganges in Hinduism etc.)

A circle is formed, the pictures are put on the floor in the middle. Together they are viewed and discussed. All terms which the PT mention, are written on cards and spread out on the floor. Together, important overall categories (see above) are defined from all those terms. Now the PT assign the picture cards to the different terms. The pictures are put up in class sorted in terms of under the different categories.

## >>> QUIZ: VIRTUAL WATER

The PT acquire basic knowledge regarding the subject water.

 Quiz

 30 Min

 Questions and answers for the quiz, egg-timer or stopwatch

A quiz like the show "Who Wants To Be A Millionaire" is performed with questions concerning availability, consumption and global distribution of water. Four people form a quizz team. (Team A, Team B, etc.). The trainer reads out the question, the team signalling first (bell, whistle, hand-signal etc.), is allowed to answer the question. Should the answer be incorrect, the second fastest team gets a chance. For every correct answer a team receives two points. If they are able to explain the answer, they receive two further points. The team with the most points is the winner. Only once the trainer has finished reading out the questions, the PT are allowed to signal. Furthermore, a speaker must not be interrupted. Two points are subtracted for each violation.

In case the PT should not adhere to these two rules, points are subtracted (two points per rule violation). Should nobody know the answer to a question, the trainer explains the correct answer in such a way that all PT understand it (ca. 20 min.)

If possible, the questions and the choice of possible answers should be projected onto the wall, so that the PT can read them and have the possible answers in front of them.

Finally, the quiz is evaluated together in plenary, considering the following questions (10 min.):

- Which answers were known?
- Which answers were surprising? Why?

## Questions

1. What percentage of the earth's surface is covered by water?

A: 71%      B: 56 %      C: 83 %      D: 46 %

2. How much of it is drinking water?

A: 15 %      B: 44 %      C: 3 %      D: 1 %

3. What is water mostly used for, globally?

A: industry      B: agriculture

C: private households

4. What percentage of the world's population has access to clean drinking water?

A: 89 %      C: 66 %      B: 98%      D: 81 %

5. There are about 7 billion people in the world. How many of these have access to sanitary facilities?

A: about 5.3 billion      B: about 4.4 billion

C: about 6 billion      D: about 2 billion

6. What is the daily water consumption of one person in Austria? (washing, cooking, drinking, etc.)

A: 90-100 litres      B: 70-80 litres

C: 40-50 litres      D: 120-130 litres

7. In Austria, For which of the following activities consumes most water used daily, on average?

A: WC-flushing      B: drinking and cooking

C: dish washing      D: clothes washing  
(washing machine)

## Answers

### Question 1:

A: 71%: "The world map shows clearly, that the oceans cover more than two thirds of our earth's surface (about 71%). Hence the earth is called the blue planet. Land accounts for less than a third of its surface (about 29%). Water is life. Without water life would not exist on planet earth."<sup>3</sup>

### Question 2:

C: 3 %: "The water on earth is mainly salt water (about 97 percent) and therefore unfit for consumption for humans. Of the remaining 3 percent drinking water the largest part is stored in the polecaps and glaciers as ice. The available drinking water reserves account for only 0,65 percent, of which the majority is difficult to access as it is ground water. A minimal rest exists in lakes, rivers, in the ground and in the atmosphere."<sup>4</sup>

### Question 3:

B: for agriculture: About 70% of the yearly extracted freshwater is consumed by the agricultural sector. Industry needs about 20 -22%, while the remaining 8-10% are used by private households.<sup>5</sup>

### Question 4:

A: 89 % „89 % (about 6.3 billion) of the world population have access to clean drinking water today. Therefore, one of the millenium development goals of the United Nations<sup>6</sup> vis reached before 2015. But in many so- called developing countries the problem continues to be acute. About 884 million people still don't have clean drinking water."<sup>7</sup>

### Question 5:

B: around 4.4 billion

"Regarding the sanitary facilities, the millenium development goal will not be reached until 2015. 2.6 billion people don't have access to simple sanitary facilities today. Only 80 percent of the urban population in so-called developing countries have access to sanitary facilities. If there were simple sanitary facilities and clean drinking water everywhere, nine out of ten diarrhoea based diseases could be avoided and therefore ten percent of all diseases worldwide."<sup>8</sup>

### Question 6:

D: 120-130 litres: "Daily on average about 130 litres of drinking water per person are consumed – if trade and industry are included, it is 193 litres per head – of which however only 2% are used as drinking water. In an EU-comparison, Austria is in third place behind Germany (129 litres/person per day). Belgians are the most frugal with 122 litres per day, while in Italy 213 litres are consumed per day. (For comparison: A household in India has to get by with 25 litres of drinking water per person per day.)"<sup>9</sup>

### Question 7:

A is correct: As the forum environmental education lists , we have an average daily consumption of 120 litres per day per person for the following tasks:

- Bathing and showering: 44 l
- WC-flushing: 25 l
- Clothes washing (washing machine): 20 l
- "Small" body hygiene & manual clothes washing: 8 l
- Garden: 7 l
- Dishwashing: 6 l
- Cleaning (house, car): 6 l
- Drinking and cooking: 4l

<sup>3</sup>Compare: Nussbaumer, Josef; Exenberger, Andreas; Neuner, Stefan: Unser kleines Dorf : Eine Welt mit 100 Menschen. Kufstein: IMT, 2009, S.63.

<sup>4</sup>Compare: Nussbaumer, Josef; Exenberger, Andreas; Neuner, Stefan: Unser kleines Dorf : Eine Welt mit 100 Menschen. Kufstein: IMT, 2009, S.63.

<sup>5</sup>[www.bpb.de/nachschlagen/zahlen-und-fakten/globalisierung/52730/wasserverbrauch](http://www.bpb.de/nachschlagen/zahlen-und-fakten/globalisierung/52730/wasserverbrauch), [www.wvsb.at/Wasserverbrauch.htm#WC](http://www.wvsb.at/Wasserverbrauch.htm#WC)

<sup>6</sup>The millenium development goals of the United Nations were decided in 2001 and are a catalogue of 8 development goals, which should be met worldwide by 2015. Hereby topics like fighting poverty, education, health and equality of women are central. Regarding access to clean drinking water and sanitary facilities the set goal was to reduce by half the number of people who don't not have access

<sup>7</sup>[www.unesco.de/weltwasserbericht4\\_kernaussagen.html](http://www.unesco.de/weltwasserbericht4_kernaussagen.html)

<sup>8</sup>[www.unesco.de/weltwasserbericht4\\_kernaussagen.html](http://www.unesco.de/weltwasserbericht4_kernaussagen.html)

<sup>9</sup>[www.wvsb.at/Wasserverbrauch.htm#WC](http://www.wvsb.at/Wasserverbrauch.htm#WC)

<sup>10</sup>[www.umweltbildung.at/cms/download/623.pdf](http://www.umweltbildung.at/cms/download/623.pdf)

## >>> WHAT IS VIRTUAL WATER?

The PT get acquainted with the concept of virtual water.

Step1: (10 min.)

At the beginning the word “virtual“ is written on the board and the meaning is discussed.

Following this the word “water” is also written on the board and the question is asked what this could mean.

Step 2: (30 min.)

Afterwards the PT receive the worksheet “virtual water“. In small groups they work out a definition of the term and explain it with reference to a product (pork chop, car, etc.), therefore describing in which context water is used to manufacture this



developing a definition by using an example



40 min.



worksheet “Virtual Water“, cards

product. Definitions and explanations are written on note cards, briefly presented and put up on the wall.

At the end it is pointed out, that the term ‘virtual’ can be confusing, as, in real terms, this water is used in reality. That is why we use the terms ‘direct’ and ‘indirect’ water consumption.

Either or all of the following three methods can be used as in-depth material for the topic virtual water.

## >>> WATER USED IN FOOD PRODUCTION

The PT specifically apply the concept of virtual water. They can make simple calculations regarding virtual water.

Step1:

For clarification and developing a better understanding of the concept virtual water a practical example is used.

At the beginning the products that are found on the worksheet “Table for virtual water usage“, are written on the board; excluding the figures. The PT must assemble a snack / meal from these products and in groups (2-3 persons) discuss how large its virtual water consumption could be.

Step 2:

Following this, the PT receive the worksheet “Table for virtual water consumption“. This includes a table with the figures for the consumption of water. Everyone can now calculate his or her approximate water consumption.

In addition, the PT can be given the following tips: 1 slice of bread ca. 40g, 1 slice of cheese ca. 15g, 1 slice processed meat ca. 10g, 1 banana ca. 150g.



calculating



30 min.



worksheet „table of virtual water consumption“ (copy template)

In the plenary, the water consumption of the meals is compared. Together it is considered why certain products need so much more water for their production than others.

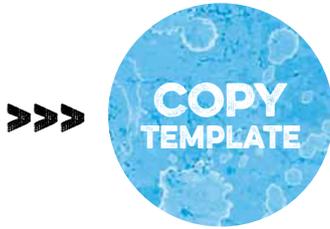
Finally, reveal the figures for the average daily consumption of virtual water per person in different countries:

Consumption of virtual water per day and per person in<sup>11</sup>:

- China: 2934.2 litres (10 % imported)
- Germany: 3906.8 litres (68.8 % imported)
- Yemen: 2468.5 litres (75.7 % imported)
- Columbia: 3767.1 litres (19.9 % imported)
- Estonia: 4712.3 litres (51.7 % imported)
- Slovakia: 3657.5 litres (35.1 % imported)
- Austria: 4378.1 litres (68.4 % imported)
- USA: 7786.3 litres (20.2 % imported)
- Zambia: 2523.3 litres (9.8 % imported)
- Global average: 3794.5 litres<sup>12</sup>

<sup>11</sup>Source, if not otherwise stated: [www.waterfootprint.org/?page=cal/waterfootprintcalculator\\_national](http://www.waterfootprint.org/?page=cal/waterfootprintcalculator_national)

<sup>12</sup>[www.waterfootprint.org/Reports/Report50-NationalWaterFootprints-Vol1.pdf](http://www.waterfootprint.org/Reports/Report50-NationalWaterFootprints-Vol1.pdf)



# WHAT IS VIRTUAL WATER? AND: WATER USED IN FOOD PRODUCTION

## WORKSHEET „VIRTUAL WATER“

A Water lies behind a lot more things than you would suspect involve water.

It is not always obvious that a lot of water is required to produce certain goods. We consume a lot more water every day than we would ever imagine. Water is not only needed for drinking, cooking, washing or watering flowers, but also to manufacture products. In those processes, where water evaporates, is polluted or consumed. This water is called virtual water, as its use is not immediately visible.

Each Austrian consumes about 4377 litres of water per day (environmental protection, 08/03/2012). This is as much as about 20 full bathtubs. More than half of this - 68.4% - is

imported. This is called water footprint. It shows the direct and indirect water consumption of people or products. The water footprint of a country and also the personal one can be calculated by using the homepage [www.waterfootprint.org](http://www.waterfootprint.org).

In Austria there is fortunately no lack of water, but in many countries from which we import consumer goods, water is a scarce commodity. For example, we are not simply importing coffee beans, but at the same time a lot of water that is used for the cultivation of coffee. For a cup of coffee about 140l of virtual water is required (Bavarian State Ministry, 2009). Virtual water is not only needed for food, but also for the production of clothing, technical devices or paper.

Source: Bayrisches Staatsministerium für Umwelt und Gesundheit (Hrsg.): Virtuelles Wasser. Verstecktes Wasser auf Reisen. Informationen und Poster für die Umweltbildung. München, 2009.  
 UmweltSchutz: Österreich-Wasser Netto Importeur. Artikel 08/03/2012: [www.umweltschutz.co.at/Wasserrussabdruck.283.0.html](http://www.umweltschutz.co.at/Wasserrussabdruck.283.0.html)

## TABLE OF VIRTUAL WATER CONSUMPTION

food				consumer goods	
1 kg bread	1,300 litre	1 glass of milk	200 liter	1 kg ordinary paper	2.000 liter
1 kg cheese	5.000 litre	1 kg bananas	859 liter	1 kg recycled paper	20 liter
1 egg	200 litre	1 kg strawberries	276 liter	1 PC	20.000 liter
1 kg sugar	1,500 litre	1 hamburger	2,400 liter	1 mobile phone	3.000 liter
100 g chocolate	225 liter	1 kg beef without bones	15.500 liter	1 car	400.000 liter
1 glass of orange juice	170 liter	1 kg pork	4,.800 liter	1 T-Shirt	2.700 liter
1 glass of apple juice	190 liter	1 kg chicken	3.900 liter	1 Jeans	11.000 liter
1 cup of tea	30 liter	1 beer (0,5l)	150 liter	1 pair of leather shoes	8.000 liter
1 cup of cacao	100 liter	1 bag Chips	185 liter		
1 cup of coffee	140 liter				

Origins: [www.aktiongrundwasserschutz.de/schulen/schulenvirtuelleswasser/wo-ist-virtuelles-wasser-drin](http://www.aktiongrundwasserschutz.de/schulen/schulenvirtuelleswasser/wo-ist-virtuelles-wasser-drin)  
[www.virtuelles-wasser.de/produktgalerie.html](http://www.virtuelles-wasser.de/produktgalerie.html), [www.waterfootprint.org](http://www.waterfootprint.org)  
 All data are average peak indicators and can be little differ slightly in other tables. Due to the quantity of parameters the resulting number can be lower or higher than the numbers in this table. Another parameters are the specific water demand, the place where the fruit or vegetables are grow, the quality of the water supply system and many more.  
 A further exercise can be to ask the participants for the reason of the varying numbers.

## >>> HOW MUCH WATER IS THERE IN...

The PT get acquainted with dimensions of water consumption of daily products (especially foodstuff). This is and the first conscientisation around sensitisation takes place for the topic 'sustainable consumption of resources'.

A guessing game about the water content of certain products is conducted with the PT. As preparation, the separate information sections of the text cards "guessing-game products" are cut, so that 27 cards with products and 27 cards with text-data are available.

The PT form a circle, the cut out cards are laid down in the centre and mixed. The PT have 5 minutes to assign text-data to each product. A signal announces the start and the end of the game. The correct pairs are put to the side and

 guessing game

 30 min.

 text cards „guessing-game products“ (copy template), stopwatch

the next round begins. The game is played until all pairs are found.

Solutions can be found on the worksheet "Table for virtual water consumption".

Following this, the game is evaluated reviewed using the following questions:

- What was surprising?
- What was already known?
- How could we limit our consumption of virtual water?

## >>> VIRTUAL WATER IN PICTURES

PT deal with dimesions for the water consumption of daily products. They can illustrate the information in form of graphics.

The PT receive the worksheet "Table for virtual water consumption" and in small groups develop appealing diagrams, in which the information is presented visually.

They can choose the products they want to use for this purpose and compare their water consumption. Possibilities are:

- Bar charts: 1cm stands for 10l water (must be adjusted depending on the chosen product)
- A corresponding number of buckets for every product (1 bucket stands for 10l)

The PT receive suggestions for the graphic design from the trainer under [www.google.at](http://www.google.at) in the category pictures "virtual water".

 Production of a visual illustration

 30 min.

 worksheet "Table for virtual water rconsumption", pens, poster, rulers, etc

The finished diagrams are presented in class and put up.

Afterwards the following questions are discussed:

- What appeal does the information have if it is visually processed? Does it change the perception?
- What was surprising about the figures?
- What was already known?
- How could we limit our consumption of virtual water?

Tip for further work:

In the mathematics lesson the conversion of measurements can be practiced.



# HOW MUCH WATER IS THERE IN... GUESSING GAME

<b>1 KG BREAD</b>	<b>1300 LITER</b>	<b>1 KG CHEESE</b>
<b>5000 LITER</b>	<b>1 CHICKEN EGG</b>	<b>200 LITER</b>
<b>1 KG SUGAR</b>	<b>1500 LITER</b>	<b>225 LITER</b>
<b>1 CUP OF TEA</b>	<b>30 LITER</b>	<b>170 LITER</b>
<b>190 LITER</b>	<b>100 LITER</b>	<b>140 LITER</b>
<b>1 GLASS OF MILK</b>	<b>200 LITER</b>	<b>859 LITER</b>
<b>1 BAG CRISPS</b>	<b>257 LITER</b>	<b>2400 LITER</b>
<b>1 KG BANANAS</b>	<b>150 LITER</b>	<b>185 LITER</b>
<b>1 HAMBURGER</b>	<b>2000 LITER</b>	<b>20 LITER</b>



# HOW MUCH WATER IS THERE IN... GUESSING GAME

<b>1 BEER (0,5L)</b>	<b>1 MOBILE PHONE</b>	<b>1 COMPUTER</b>
<b>1 JEANS</b>	<b>20.000 LITER</b>	<b>3000 LITER</b>
<b>400.000 LITER</b>	<b>1 CAR</b>	<b>2700 LITER</b>
<b>11.000 LITER</b>	<b>1 T-SHIRT</b>	<b>8000 LITER</b>
<b>15.500 LITER</b>	<b>4800 LITER</b>	<b>3900 LITER</b>
<b>1 KG ORDINARY PAPER</b>	<b>1 KG STRAWBERRIES</b>	<b>100G CHOCOLATE</b>
<b>1 GLASS OF APPLE JUICE</b>	<b>1 KG RECYCLED PAPIER</b>	<b>1 CUP OF COCOA</b>
<b>1 PAIR OF LEATHER SHOES</b>	<b>1 CUP OF COFFEE</b>	<b>1 GLASS OF ORANGE JUICE</b>
<b>1 KG BEEF</b>	<b>1 KG PORK</b>	<b>1 KG CHICKEN</b>

# >>> PRODUCTION OF GOODS AND ITS WATER CONSUMPTION

The PT explore the production of food and other products in their everyday life. Thereby they deal with the connection of the intensity of water consumption for production, the available water resources in the country, and associated environmental and health problems.

Likewise the PT become acquainted with the water usage footprint and reflect about the import of water from water-poor regions.



group work, working on a text, production of a poster



110 min.



posters and pens, coloured pens, 5 water maps, 5 world maps, infotexts "water consumption in agriculture", adhesive strips, masking tape, worksheet "the water-footprint"

preparation

5 water maps ([wasserwerke-sonneberg.de/v4/wasser/wissenswertes/wasser-weltweit.html](http://wasserwerke-sonneberg.de/v4/wasser/wissenswertes/wasser-weltweit.html)) and 5 world maps (e.g. [www.mygeo.info/karten.html](http://www.mygeo.info/karten.html)) are printed out.

step1:

At the beginning the class is divided into five groups. Each group deals with one product (cotton, wheat, coffee, soya, tomatoes). (If there are fewer than 5 PT from only one product, only 4 groups can be formed. In this case one product is left out.)

Everyone in each of the groups receives an infotext about their product. Additionally, every group receives a water map, on which the water situation of the respective countries is drawn (see above link). As there are no country borders drawn on the water map, the PT additionally receive a world map. After having read the information (text and water maps), the group transfers it on a poster on a flipchart, prioritizing the following:

- Conditions of cultivation conditions of the product
- Countries that cultivate the product and their water situation
- Effects on the local population
- Problems concerning the environment

The following questions could create interesting discussions. Not all questions are relevant for all groups:

- Where does this product grow?
- Which climatic requirements does it need?
- What is the water situation in the main countries that grow the product?
- On what does the water consumption depend on for the cultivation of the product?
- Are there differences in the respective countries that grow the products?
- How can the water consumption be reduced

for foodstuffs?

- Which effects on humans and the environment does intensive cultivation have?

For the design of the poster there are no limits set for creativity and fantasy. Afterwards the posters are presented in the group. Display all flipcharts.

Step 2:

The class now, in plenary, discusses: Which conclusions can be drawn from the compiled facts? What core conclusions can be deduced from that?

Ideas for the trainers can be found below:

- In water-poor regions goods are produced for water-rich regions.
- The local population's water supply for drinking water or water for the cultivation of staple foods is scarce.
- Many exporting countries suffer from water shortage. Is it sustainable therefore to use up the limited resources for export?
- Agriculture should adapt to the respective ecological conditions in countries with high as well as low precipitation, and not grow the same cash crops for the global market everywhere.
- Etc.

Step 3:

The PT split up into small groups of 4-5 persons. Each group receives the cut-up worksheet "The water-footprint" (not in the order of the citation!) and tries to put the parts into the correct order, so that the text makes sense.

In plenary, the concept of the water footprint is discussed. Afterwards the following questions can be discussed in the group:

- Which products do I prefer buying? Are there many imported ones amongst them?

- A lot of virtual water is used for the production of meat. How often do I eat meat per week?
- What would have to happen to change my behaviour?

Answers: „The Water-footprint“

“The water-footprint is a further development of the virtual water-concept. It is assumed that half of the 5000 litres of virtual water that we consume is imported. The water-footprint concept wants to create a water balance-sheet between the countries. The idea behind it is that countries which suffer from aridity anyway should export less water. However, it is exactly these countries that cultivate coffee, rice or cotton in a water intensive way. In so-called developing countries a lot of water, which the local people and the local agriculture lack, is used/consumed for the production of export goods to industrialized countries.”

[www.planet-wissen.de/natur\\_technik/wasser/wasserversorgung/virtuelles\\_wasser.jsp](http://www.planet-wissen.de/natur_technik/wasser/wasserversorgung/virtuelles_wasser.jsp)

#### Variation

The trainer can also mention the concept of ecological footprint. In order to find out how high their water footprint is, the PT can calculate their own.

On [www.waterfootprint.org](http://www.waterfootprint.org) a short and a long version is offered in English. The short version takes origin, gender, eating habits and income into account. The longer version also includes consumption and lifestyle. (ca. 20 min.)

As an example a comparison could be made with a fictitious person in India.



# PRODUCTION OF GOODS AND ITS WATER CONSUMPTION: THE WATER-FOOTPRINT

The water footprint is a further development of the virtual

-----  
water concept. It is estimated that of all 5000



-----  
liters of virtual water, which we use, nearly half has to be imported. The water footprint



-----  
will produce a balance of water between



-----  
all countries. The idea behind it is that



-----  
countries, which suffer from drought, shall



-----  
export less water. Unfortunately these countries are the main producers of coffee, rice or cotton and therefore need



-----  
a lot of water for their production. Especially developing countries need a huge amount of water to produce



-----  
goods for export into industrialized countries. This water is later missing for use by



-----  
the local population and local agriculture.“



Source: [http://www.planet-wissen.de/natur\\_technik/wasser/wasserversorgung/virtuelles\\_wasser.jsp](http://www.planet-wissen.de/natur_technik/wasser/wasserversorgung/virtuelles_wasser.jsp)



# PRODUCTION OF GOODS AND ITS WATER CONSUMPTION: WATER CONSUMPTION IN AGRICULTURE

## COTTOM

A life without cotton cannot be imagined today. Not only clothing, but also bandages and even explosives are made from cotton. The most important countries producing cotton are the United States, Uzbekistan, China PR, India, Turkey, Brazil and Pakistan. Cotton plants are very demanding, requiring a lot of sun, water and stable, warm temperatures. On average about 9300 litres of water are needed for the harvest of 1 kg of cotton. This excludes any water required for the continued manufacturing of clothes or other products. Furthermore, many countries have problems with water evaporating before the plants can absorb it. The pipelines used to transport water to the fields are often suffering from leakages and precious water gets lost on the way (which does not only affect cotton fields, but all artificially watered fields).

Whereas in India more than half the water used is provided by rain, in more dry areas like Uzbekistan, Egypt or Turkey, additional watering is needed. To achieve this, water is pumped from lakes and rivers or from the ground. Overuse of water leads to rivers and lakes drying out as well as lowering the ground water level. This is the case for example in Uzbekistan, where water from the Aral Sea was being used for cotton fields. This lake shrunk to less than half its size and has been replaced by a salt desert in part. As a result, many fishermen and farmers lost their livelihood and are now unemployed.

Since cotton cannot be grown in Austria, Germany, Slovenia and Estonia, all of it has to be imported. Given how much

cotton clothing is being sold in Austria, this translates to huge amounts of water being imported in the process.

Another problem with growing cotton is the use of chemicals and fertilizers. .. These are supposed to combat the spread of vermin or remove the leaves from the plants so they can be processed more easily by harvesting machines. These pesticides get into the ground and from there into the ground water and furthermore into rivers in the region. The massive use of these toxic pesticides and insecticides not only has negative effects on the environment, but also on the health of the local population.

### Origins:

- Vereinigung Deutscher Gewässerschutz e.V.: Virtuelles Wasser versteckt im Einkaufskorb. Für die Sekundarstufe 1. Band 74. Bonn, 2008
- Vereinigung Deutscher Gewässerschutz e.V.: Virtuelles Wasser. Band 75. Weniger Wasser im Einkaufskorb. Bonn, 2011.
- Bayrisches Staatsministerium für Umwelt und Gesundheit (Hrsg.): Virtuelles Wasser. Verstecktes Wasser auf Reisen. Informationen und Poster für die Umweltbildung. München, 2009.
- [www.modeaffaire.de/magazin/hintergrundartikel/bio-baumwolle-wasserverbrauch/](http://www.modeaffaire.de/magazin/hintergrundartikel/bio-baumwolle-wasserverbrauch/)
- [www.oeko-fair.de/kleiden-schmuecken/baumwolle/verwendung3](http://www.oeko-fair.de/kleiden-schmuecken/baumwolle/verwendung3)



# PRODUCTION OF GOODS AND ITS WATER CONSUMPTION: WATER CONSUMPTION IN AGRICULTURE

## WHEAT

Wheat is grown on all continents, although the conditions are not the same everywhere. Among the countries producing the most wheat are the US, China, India, Russia, France and Australia.

The worldwide average of water needed for 1 kg of wheat is 1826 litres. However, in countries benefitting from enough precipitation due to a moderate climate, like Austria, Germany or France, much less water is required to grow wheat. Production is possible here without further measures. In other countries like Australia, Iran or China, however, it is only possible using irrigation.

In areas with little water reserves, intense usage for growing wheat leads to rivers and lakes drying out as well as sinking ground water levels since water is being taken from these sources. This often means that too little water remains for the needs of the local population such as drinking and farming.

Wheat is imported and exported all over the world. Austria and Germany import additional wheat, for example, even though they produce large amounts themselves and even export some.

In addition to being important for basic human nutrition,, wheat also plays a big role in animal husbandry, where it is fed in large amounts to cows, pigs and chicken. This is, Among other reasons this is,, why experts plead for a change in our eating habits: wheat instead of meat to combat water shortages all over the planet.

The so-called "Agro-SpritBio-fuel", fuel produced from plants, can also be made from wheat (alongside soy, rape seed, maize and sugar). Additional land is needed to satisfy the increasing demand for wheat used for fuel. Depending on the situation in the producing country, the land as well as the water used for wheat production, however, might be needed for agricultural production for the local population.

Origins:

- Vereinigung Deutscher Gewässerschutz e.V.: Virtuelles Wasser. Band 75. Weniger Wasser im Einkaufskorb. Bonn, 2011.
- Bayrisches Staatsministerium für Umwelt und Gesundheit (Hrsg.): Virtuelles Wasser. Verstecktes Wasser auf Reisen. Informationen und Poster für die Umweltbildung. München, 2009.
- [www.fao.org](http://www.fao.org)
- [www.statistik.at](http://www.statistik.at)

## COFFEE

Coffee is one of the goods that leaves a very large water footprint. For 1 kg of coffee, 21000 litres of water is needed. This translates to 140 litres of water for one cup of coffee.

Coffee bushes grow in tropical and subtropical regions of the planet, ideally on tropical high plateaus. It needs average temperatures of between 18 and 25°C, good soil conditions, plenty precipitation and as little direct sunlight as possible.

The most important coffee producing countries worldwide have been Brazil, Vietnam, Indonesia and Columbia (in 2010). Austrian and German coffee imports mostly originated from Vietnam, followed by Brazil. In most regions there is enough precipitation for coffee production, resulting in no negative results on local water supply.

However, especially in Brazil, coffee is also grown in lower and drier regions, where irrigation is required, thus negatively impacting on water supply. Additionally, coffee plants in monoculture plantations need more water due to often being exposed to direct sunlight.

With careful consideration of the coffee's origin, consumers can influence their personal water footprints.

The type of bean also tells us about water usage: for example, Arabica beans originating from higher areas

require less water and grow mostly without irrigation. Robusta beans from lower areas, on the other hand, need a lot of humidity and have to be watered more often.

Most Coffee is consumed in industrialized countries. With an annual average consumption of 8 kg coffee per person – which is approximately 3 cups per day – Austrians are European "champions" when it comes to drinking coffee. An exception to this is Brazil, which not only produces and exports the largest amounts of coffee but also consumes large amounts; they are the second largest market, right after the United States.

Origins:

- Vereinigung Deutscher Gewässerschutz e.V.: Virtuelles Wasser. Band 75. Weniger Wasser im Einkaufskorb. Bonn, 2011.
- Vereinigung Deutscher Gewässerschutz e.V.: Virtuelles Wasser versteckt im Einkaufskorb. Band 73. Bonn, 2008
- [www.uni-oldenburg.de/fileadmin/user\\_upload/biologie-geoumwelt/zenario/Abschlussarbeiten/Puenjer\\_BA\\_2011.pdf](http://www.uni-oldenburg.de/fileadmin/user_upload/biologie-geoumwelt/zenario/Abschlussarbeiten/Puenjer_BA_2011.pdf)
- [www.kaffeeteeverband.at](http://www.kaffeeteeverband.at)
- [www.fao.org](http://www.fao.org)



# PRODUCTION OF GOODS AND ITS WATER CONSUMPTION: WATER CONSUMPTION IN AGRICULTURE

## SOY

The protein-rich soy plant is grown mostly in Brazil, using an area as big as France and Portugal combined. Every year the country produces – mostly in the south and east – 58 million tons of soy, mostly in the south and east and exports more than half of it to Japan, China and Europe. Their neighbour Argentina as well as the United States are also important soy growing countries.

Soy is mostly being used as food for farm animals, meaning the food production alone requires a large amount of water. For example: the production of 1 kg of beef, requires 15500 litres of water. 15300 litres of this is being used for food alone which means, large amounts of water is exported in the form of soy.

Even though by EU laws, genetically modified soy cannot be grown here, year by year tons of modified soy grits are imported as animal food. These genetically modified types of soy have the advantage of being resistant to even the most aggressive types of pesticides which otherwise destroy all kinds of plants. When these pesticides are being used – which is the case in South American plan-

tations – only the soy plant and the pesticide itself survive. The toxic pesticides seep into the ground and reach the ground water. This can have grave consequences for the environment and people using the contaminated water.

Apart from the unbelievable 290,000 billion litres of water used every year for the production of soy, the use of land is also problematic, since huge areas of rain forest are cut down to make room for soy production. Additionally, local farmers cannot compete with big industrial farming corporations.

Origins:

- Bayrisches Staatsministerium für Umwelt und Gesundheit (Hrsg.): Virtuelles Wasser. Verstecktes Wasser auf Reisen. Informationen und Poster für die Umweltbildung. München, 2009.
- [www.wwf.de/themen-projekte/landwirtschaft/produkte-aus-der-landwirtschaft/soja/](http://www.wwf.de/themen-projekte/landwirtschaft/produkte-aus-der-landwirtschaft/soja/)
- [www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF-Studie\\_Sojaboom\\_in\\_deutschen\\_Staellen.pdf](http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF-Studie_Sojaboom_in_deutschen_Staellen.pdf)

## TOMATOES

Tomatoes can nowadays be bought the whole year around. In During winter these have to be imported from warmer regions since tomatoes need a lot of warmth and sun to ripen. Many tomatoes come from Almeria, a small region in southern Spain which has become the greenhouse of Europe. Once one of the poorest regions of Spain, it now boasts the highest per-capita income. This came atwith a price. For kilometres, nothing but plastic greenhouses can be seen – Almeria has become a sea of plastic. Irrigation is needed to grow tomatoes in this warm and dry area. To achieve this, deeper and deeper drilling is needed to reach the receding ground water. The impact on the environment is huge. The most unbelievable projects are being thought up to transport water from other parts of the country to Almeria.

Work like picking and packaging is mostly done by immigrants from Africa who work under precarious conditions without rights and for low wages.

Canned tomatoes, tomato paste or purée also mostly come from southern countries with low precipitation.

Tomatoes from central Europe require a lot less water than those from warmer planting regions near the Mediterranean Sea like Italy or Spain.

For example, tomatoes from the Netherlands only require about 10 litres per kilogram, whereas those from Southern Spain need 85 litres on average and those from Egypt 230. In Apulia in southern Italy more ground water is used for growing tomatoes than is healthy for the environment. As a result, salt water gets into the ground water pipes. In northern Italy however, precipitation levels are higher and tomatoes can be watered naturally.

When tomatoes of Austrian or German origin are being purchased in the winter month, these are usually from greenhouses that need a lot of energy for heating and light, which results in higher CO<sup>2</sup> output.

Origins:

- Vereinigung Deutscher Gewässerschutz e.V.: Virtuelles Wasser. Band 75. Weniger Wasser im Einkaufskorb. Bonn, 2011.
- Vereinigung Deutscher Gewässerschutz e.V.: Virtuelles Wasser versteckt im Einkaufskorb. Band 73. Bonn, 2008

# WATER – A LIMITED RESOURCE

„Worldwide, water consumption increased about sixfold between 1930 and 2000. This is due to the tripling of the world population and the doubling of the average water consumption per head.. Since the year 2000, the world population has increased by about 79 million people every year. In the context of economic growth, increasing urbanisation and the spread of consumption-intensive lifestyles, population growth increases water demand by 50 to 64 billion cubic metres per year.

Considering spatial and temporal fluctuations of water availability, growing water consumption has the consequence that water in many areas of production is getting scarce. The shortage becomes obvious when rivers carry less water, lakes dry up and ground water levels sink in many places.

Parallel to the increasing use, drinking water reserves are further reduced by climate change and pollution. UNESCO

assumes that daily about two million tonnes of waste are deposited in open water. It is estimated that global sewage production is about 1.500 km<sup>3</sup>. Assuming that 1 litre of sewage can pollute 8 litres of drinking water, the current sewage load can be up to 12.000 km<sup>3</sup> globally. At the same time, in developing countries more than 80 percent of waste water flows into rivers, lakes and seas untreated, according to information from UNESCO.

By the middle of this century the worst case scenario predicts that seven billion humans in 60 countries will be affected by water shortage and in the best case two billion humans in 48 countries. Despite the limited availability of water many cost-saving opportunities such as better irrigation techniques, cultivation of suitable products, careful consumer behaviour and avoiding drinking water use in the agricultural sector – are not used.<sup>13</sup>

<sup>13</sup>Source: [www.bpb.de/nachschlagen/zahlen-und-fakten/globalisierung/52730/wasserverbrauch](http://www.bpb.de/nachschlagen/zahlen-und-fakten/globalisierung/52730/wasserverbrauch)

## >>> THE WORLDGAME

**The PT recognise connections between population figures, income, access to drinking water and sanitary facilities. They learn to understand and present statistics figures for these issues, although simplified, and to understand them.**

This game is only possible with a minimum group size of 10 people. A group size of 20 persons and more is ideal.

The world game makes it possible to illustrate and understand statistical figures regarding the world population, distribution of income as well as access to drinking water and sanitary facilities, although simplified.

### preparation

For step 1 and 2 the names of the continents are each written on a piece of paper: Africa, Asia, Europe incl. Russian Federation, Latin-America & Carribean, Oceania, North America.

For step 3 till 5 the names of the following regions are each written on a piece of paper:

Developed Countries, Latin-America & Carribean, Asia (incl. Russia), Africa and Oceania.

 Game

 50 Min

 sheets of paper, as many chocolates (if possible fair trade) as there are PT, copy template “Figures for the Worldgame“

### Implementation

At the beginning of this game the PT are informed about the content and the intentions of the game. Afterwards the PT are asked for their estimates about “resources-distribution“ (population, income, access to drinking water, access to sanitary facilities) within the regions (see the separate steps of the game). On the data sheet there is a 5 stage setup. If the number of PT doesn't match up, the distribution for the population and the income must be calculated).

In order to simplify the start of the game, it is advisable to start with western Europe in every round, as the PT have most knowledge about that area.

### Step 1: Distribution of the world population

The previously prepared signs with the names of the continents are distributed throughout the room. The PT of one class represents the total world population, the number of the PT represents 100 percent of the world population.

The PT now estimate the distribution of the world population regarding continents and distribute themselves accordingly on the areas marked as continents on the floor. Now they are asked if they agree with the distribution. If not, the issue is discussed and corrected. Later the correct distribution of the world population is announced according to a distribution ratio (see datasheet "figures regarding the worldgame") and corrected.

Now the PT get the opportunity to say what they think about the distribution (what surprised them, etc.) The PT remain on their places where they are "representatives" of the continents.

### Step 2: distribution of the world income

Next the PT should guess how the world income (in this case measured on the basis of the GDP) is distributed among the different continents. The available chocolates (1 piece per PT) represent 100% of the world income and are allocated to the various continents.

After a short inquiry and if all agree, the distribution key is announced again (see data sheet "figures for the worldgame") and corrected together. The PT are asked to comment spontaneously on the findings and the inequalities experienced personally in the distribution of the world income (possible reactions like demands, anger and other causes).

What follows is a short explanation regarding the Gross Domestic Product (GDP). Information about it can be found further below.

### Step 3: access to clean drinking water

Next the PT should estimate how many people on one continent don't have access to clean drinking water. As the continent distribution is different here due to the available data (developed countries together, Russia as part of Asia), the sheets with the continent descriptions for drinking water and sanitary facilities are laid out (for those continent sheets which roughly correspond to them) and the differences are briefly explained. Now the PT estimate how many percent of the population have no access to clean drinking water on every continent. The figures are noted down on the continent sheets. After a short

inquiry, if all agree, the distribution key is announced again (see datasheet "figures regarding the worldgame") and the estimate on the continent sheets is corrected.

Attention: The figures for the access to clean drinking water and sanitary facilities refer to the year 2008!

Afterwards the PT have the opportunity to comment on the result.

### Step 4: Evaluation clean drinking water

The PT are asked for their opinion what the important reasons are for this lack of access.

A further question could deal with the access to clean drinking water in Africa: Do you think that this problem exists in the whole of Africa with the same urgency, or are there some regions with more severe water problems? It can also be asked if they think there is a difference between urban and rural areas regarding this issue.

Altogether about 880 million people world wide didn't have access to clean drinking water in the year 2008 (latest available figures in this context). This corresponded to 13% of the world population. A lot has happened however in the last 10-20 years regarding this issue, especially in India and China.

During the evaluation it should be pointed out that the access to water on the continents is not uniform. For example, in North Africa only about 8% of the population have no access, while it is 40% in sub-saharan Africa. Also, access in the city is better than in the countryside (in Oceania in cities 8% don't have access to clean drinking water, but in the countryside it is 63%)<sup>14</sup>.

Thereafter it is pointed out that there is not only a lack of water but also a lack of infrastructure (pipelines, pumps, reservoirs etc.) that hampers access to water.

Furthermore, economically developed countries can fall back on water resources in other countries and import water in the form of virtual water.

### Step 5: Access to sanitary facilities

Parallel to step 3, access to sanitary facilities can be looked into. In the discussion the PT should also think about why access to sanitary facilities is so important (clean drinking water and missing sanitary facilities are the main reasons for high infant mortality rate and many diseases).

Afterwards the "world income" is distributed correctly evenly so that and everyone gets a chocolate.

<sup>14</sup>Further information about statistics and their interpretation under: [www.bpb.de/nachschlagen/zahlen-und-fakten/globalisierung/52696/trinkwasser-und-sanitaereinrichtungen](http://www.bpb.de/nachschlagen/zahlen-und-fakten/globalisierung/52696/trinkwasser-und-sanitaereinrichtungen)

Information for trainers regarding the GDP (Gross Domestic Product)

The Gross Domestic Product (GDP) is an established measurement for the economic performance of a national economy and includes the entirety of all the rendered goods and services in the national economy.

- Income and wealth distribution
- Welfare-state security systems (state pension, health insurance, care benefit)
- Further factors e.g. social peace, air quality, relaxation areas
- Ecological costs of our economic management

Economic performance and wealth

The validity of the GDP regarding wealth and quality of life of the population in a national economy is imprecise, as the following factors are not, or only vaguely, calculated in:

- The informal sector
- Unpaid activities (provision-work within the family, housework, do it yourself jobs, child care and care for the elderly, voluntary effort etc.)

Factors that increase the GDP and the HDI in industrialized countries are the costs which develop for care for children and the elderly, medical operations, flooding and accidents of any kind etc.

A further aspect, which is blanked out inwith the game, is the question regarding distribution within the continents in a social context (between the poor and the rich in one country) and between the countries on the continents.



# WORLD GAME: PARAMETERS

## WORLD POPULATION

Continents	Total in Mio	%	10PT	15 PT	20 PT	25 PT	30 PT
Europe and Russia	740,00	10,37	1	2	2	3	3
North America	352,00	4,93 0	1	1	1	1	1
Latin America & Caribbean	606,00	8,49	1	1	2	2	3
Asia	4.302,00	60,27	6	9	12	15	18
Africa	1.100,00	15,41	2	2	3	4	5
Australia und Oceania	38,00	0,53 0	0	0	0	0	0
World	7.138,00	100	10	15	20	25	30

Quelle: vom 29.07.2014 (bezogen auf Mitte 2013) [www.weltbevoelkerung.de/datenreport](http://www.weltbevoelkerung.de/datenreport)

## WORLD INCOME (CALCULATED OF THE GDP)

Continents	Total in bn \$	%	10PT	15 PT	20 PT	25 PT	30 PT
Europe and Russia	21.987,00	30,74718	3	5	6	8	9
North America	16.831,00	23,5369	2,5	4	5	6	7
Latin America & Caribbean	5.614,00	7,85076	1	1	1	2	2,5
Asia	23.528,00	32,90215	3,5	5	7	8	10
Africa	1.880,00	2,62904	0	0	1	1	1
Australia und Oceania	1.669,00	2,333972	0	0	0	0	0,5
World	71.509,00	100	10	15	20	25	30

Quelle: vom 22.11.2012 (bezogen auf 2011) [www.imf.org/external/pubs/ft/weo/2012/02/index.htm](http://www.imf.org/external/pubs/ft/weo/2012/02/index.htm)

## HOW MANY PERCENT OF THE WORLD POPULATION HAVE NO ACCESS TO DRINKING WATER?

Continents	%	
Developed Countries	1,00%	Every 100th
Latin America & Caribbean	6,00%	Every 17th
Asia (incl. CIS)	9,5%	Every 10th
Africa	32,30%	Every 3rd
Oceania	44,00%	Every 2nd
World	11,00%	Every 9th

## HOW MANY PERCENT OF THE WORLD POPULATION HAVE NO ACCESS TO SAVE UND CLEAN SANITARY FACILITIES?

Continents	%	
Developed countries	4,00%	Every 25th
Latin America & Caribbean	18,00%	Every 5,5th
Asia (incl. CIS)	41,80%	Nearly every 2,5th
Africa	60,00%	Nearly every 2nd
Oceania	64,00%	Nearly every 1,5nd
World	36,00%	Nearly every 3rd

To have no access to save and clean sanitary facilities means that several houses have to share toilets, humans are not protected to get in contact with excrements or have no toilets at all.

Origin: WHO/Unicef: Progress on Drinking Water and Sanitation, 2013 update - Zahlen bezogen auf 2011

## >>> WATER SHORTAGE IN MY LIFE

The PT assume the position of a person who has only little water available in his or her life. They practice empathy.

 creative work

 30 min

 coloured pens, posters etc.

The PT consider the following questions on their own or in groupwork:

- Which consequences would it have on your life if you had only limited access to water?
- What would that mean for your daily life?

Think about your daily direct and indirect consumption. Create a mindmap, a poster with

pictograms, a diary entry, a newspaper article or a picture.

Note: Depending on the prior knowledge of the PT, one activity can be chosen by the trainer

## >>> WATER: COMMODITY OR HUMAN RIGHT?

The PT deal with the topic water as a commodity or as a human right using bottled water as a focal point. They deal with company strategies and with environmental and human rights issues.

 movie, discussion, role play

 145 min.

 masking tape for the marking of the line, internet, beamer and loudspeaker, rolecards

Step 1: my consumption of plastic bottles (15 min)

In the class a line is marked with the masking tape. The PT consider how many drinks in plastic bottles they “consume” per month. Afterwards they are asked to stand along the line. This reaches from 0 bottles in the spacing of five up to 30 bottles. When all the PT stand on the line, each person explains the reason why he or she uses plastic bottles (for travelling and having nothing else to drink, soft drinks, excursions, etc.). The reasons are noted on the board by the PT.

Step 2: “The story of bottled water” (30 min.)

Together the film “The story of bottled water” is watched in English:  
[www.storyofstuff.org/movies-all/](http://www.storyofstuff.org/movies-all/)

story-of-bottled-water

Subtitles in different languages are offered. On the right hand side in the film screen, there is a square with CC. If clicked, subtitles appear in different languages.

Afterwards the following questions are discussed:

- How did you like the film?
- What was new for you? What have you known already?
- Did anything particularly surprise you?
- Why did people start buying water in plastic bottles anyway?
- Does Annie only address local problems in the USA or global ones? If yes, which?
- What does she campaign for? What is the plea of the film?
- Which possible solutions does she state?

Step 3: Podium discussion about the topic "Water: Commodity or Human Right" (100 min.)

A podium discussion about the topic "Water: Commodity or Human Right" is carried out with the PT, it is discussed specifically considering the worldwide bottled water industry. In the discussion, various aspects of the topic 'bottled water' should be highlighted on the basis of four subject blocks.

- Why does bottled water exist at all? Sense or nonsense?
- What about the issue of sustainability?
- Which advantages and disadvantages are created for the local population by the companies in the plastic bottle sector?
- Who does the water belong to? Is it a public good or a commodity?

At the end the discussion each group presents a final statement about the question: Who does water belong to? Is it a public good / human right or a commodity?

The PT divide into five groups with the following roles: moderator, company spokesperson, environmentalist, human rights activist, water advisor. Each group receives their role description with a question and various arguments.

The group has 40 minutes to read the texts, prepare the topics and arguments and prepare themselves for their role.

(For simplification: The statements on the role-cards can be cut out by the PT and matched to the respective blocks.)

Every group sends one representative to the discussion and the discussion rules are explained. As a reminder they can also be written on the board.

During the whole discussion the following rules apply:

- Nobody must be not interrupted
- Everyone listens to the others respectfully
- Respond to the to the arguments of the other participants
- One treats others respectfully

The moderator begins the discussion and the four questions are discussed. After every topic there is the possibility to exchange speakers with other members of the group. The spectators observe the discussion and make notes considering the following questions:

- Do the players perform their roles convincingly?
- Which arguments are brought forward?
- Are the arguments convincing?
- Are the interests of the person clear?
- Do the participants respond to each other's arguments?

Following the podium discussion a short reflection on the following questions is carried out.

Participants:

- Was it difficult to put yourself into the role?
- How did you feel in your role?
- Could you identify with your role?

Spectators:

- Did the players portray their roles convincingly?
- Which arguments weare convincing?
- Did the participants respond to each other?

Overall conclusion:

- How do you assess the problem, personally?
- Which courses of action do you see?
- How did the podium discussion relate to the introductory discussion at the beginning of the exercise (positioning of the PT on the line).



# WATER: COMMODITY OR HUMAN RIGHT? ROLE-PLAYING CARD: MODERATOR

## MODERATOR

You are the moderator of a panel discussion. Your task is to greet all participants, on stage and the audience. Furthermore, you have to introduce the topic of discussion "Water: Product or Human Right". This topic should be discussed on the basis of the global business with bottled water. Afterwards, you have to introduce your guests on the panel. Give a short outline of the topic in order to help your guests to enter the discussion. Your task is to guide the discussion, to ask questions and to pay attention that all of your guests are able to state their viewopinion. At the end of the panel discussion you have to ask your guests to give a concluding statement focusing onin response to the following questions: Who does water belong to? Is it a human right or a commodity? Who is the owner of water? Is water a human right or a product?

Different aspects of the topic "Bottled water" should be highlighted during the discussion. You, as a moderator, have to think about possible questions on the following subjects:

- Why do we have bottled water? Worthwhile or not?
- What about sustainability?
- Which pros or cons does the plastic bottle industry have for the local population?

### Introduction for the panel discussion

Water is one of the world's most precious raw materials because it is essential for life and irreplaceable. One of the biggest problems, though, is the fact that in today's society water has become a scarce and controversial commodityresource.

According to the latest estimates of the United Nations, the world population will grow around two to three billion by the middle of the century. The Food and Agriculture Organization of the United Nations assumes that by 2050 the total demand for water will rise by up to 20 percent. However, the largest population growth will be in regions that already suffer from a lack of water.

Fresh water is not distributed equally throughout the world . 60 percent of all fresh water is located in ten countries (mainly in the USA, Russia and Brazil). Moreover, products for water rich countries are manufactured in regions with water shortage. Globalization leads to worldwide dependencies and an increase in social injustice.

The world population is growing steadily whereas fresh water is becoming an increasingly scarce commodityresource. Multinational corporations such as Nestlé, Danone, Coca Cola und Pepsi are promoting their tap water in bottles. In rich countries these companies emphasize claim that their water has health benefits. Moreover, they argue that their water is important for poor countries because it offers protection against disease. Some people say that these multinational corporations are stealing the water from the community. The corporations argue, though, that they guarantee that people all over the world receive safe drinking water.



# WATER: COMMODITY OR HUMAN RIGHT? ROLE-PLAYING CARD: CONSULTANT

## INTERNATIONAL WATER CONSULTANT

As a consultant you present amongst other things the concerns of the government for whom which you work for as an advisor. On the one hand, companies provide jobs, but on the other hand, the government is responsible to defend the rights of their population, for example the right for water. At the same time you know that governments of different countries all over the world invest little in the development of infrastructure. The reason for this is a lack of money. Your task is to point out ways and means how one can deal effectively with the precious blue gold.

In order to find suitable arguments try to use the following questions for orientation:

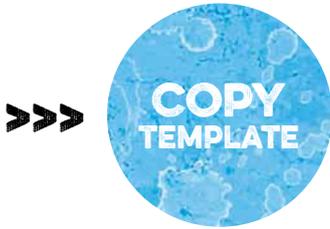
- Why do we have bottled water? Worthwhile or not?
- What about sustainability?
- What are the advantages and disadvantages that plastic bottle producers bring to the local communities?

At the end you have to make a concluding statement to the following question: Who does water belong to? Is it a human right or a commodity?

Who is the owner of water? Is water public property or a product?

### Argument

It is estimated, according to the United Nations, that the world population will grow up to two-three billion by the middle of the century. Moreover, worldwide demand of food will rise by up to 70 percent. It would be of great benefit if losses during production and sale of food could be decreased and if waste by consumers could be reduced. United Nations Food and Agriculture Organizations act on the assumption that water demand in agriculture will rise only by eleven percent but the general water demand by 20 percent until 2050. However, the higher demand will be in regions that already suffering from a lack of water.



# WATER: COMMODITY OR HUMAN RIGHT? ROLE-PLAYING CARD: HUMAN RIGHTS

## AGENT OF AN INTERNATIONAL HUMAN RIGHTS ORGANISATION

You have worked for several years for an international human rights organization with a special focus on water. One task of your organization is to research the problems of multinational corporations moving into the area of water supply. As a defender of access to water as a human right, which was ratified by the UN in 2010, you are trying to document and publish cases where international corporations have ignored this right by the local population.

Read background informations. Search for arguments, which prove that corporations only look for profit and that they are not interested in the health of people. Explain why the human right to water should be implemented in all countries.

In order to find suitable arguments use the following questions:

- Why do we have bottle water? Worthwhile or not?
- What about sustainability?
- Which pros or cons do companies in the plastic bottle industry have for the local communities?

At the end you have to make a concluding statement to the following question: Who is the owner of water? Is water public property or a product?

### Arguments

In 2010, the United Nations passed a bill that affirms clean water and sanitation conditions as a human right. According to international law this bill is not binding as long the right is not passed as a law in the individual countries.

Water plays a central role in for human life, for nutrition and health. Food cannot be produced without water. [...] WHO and UNICEF state in 2010 that nearly 884 million people have no access to clean water. "The United Nations recommend that every human shall have between 20 and 50 liters a day to satisfy their basic needs for drinking, cooking and washing." [www.welthungerhilfe.de/fileadmin/user\\_upload/Themen/Wasser/Fact\\_Sheet\\_Wasser\\_2013.pdf](http://www.welthungerhilfe.de/fileadmin/user_upload/Themen/Wasser/Fact_Sheet_Wasser_2013.pdf)

All over the world corporations like Nestlé, Coca Cola and others buy water springs to use for bottled water.. Most NGOs are against this. They argue that access to water is a basic human right. They also fight against the privatization of water. Because of the water policy of multinational corporations, local governments in developing countries do not invest enough money in their public water supply system. The victims of this policy are poor people, which who can not afford bottled water . Other points of criticism are the corporations' aggressive sales policy and their high profit margins .

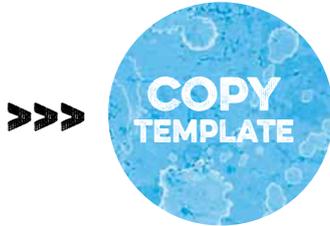
Nestlé opened a facility in Pakistan 40 km away from Lahore, which uses water from a deep well for bottling the brand "Nestlé Pure life". The corporation sells the plastic bottles to the local population of Pakistan and Afganistan. Nestlé is accused of lowering the groundwater level around the village Bhati Dilwan. As a result, many public local wells around the area of the facility have dried up. The movie "bottled life" explains that the corporation extracts in Pakistan every year several billion liters of water out of wells to produce bottled water. According to a study conducted in Sheikupura, the Nestlé facility in Sheikupura needs 12 liters of groundwater to produce 1 liter of Pure Life.

"Nestlé steals our water. We claim that Nestlé shall drill another deep fountain and build at least one public water pipe for the population of the village." Umar Hayat, former council member of Bhati, Pakistan

Sentence from the movie: The bottled life, [www.bottledlifefilm.com/index.php/berichte-und-materialien.html](http://www.bottledlifefilm.com/index.php/berichte-und-materialien.html)

"More children are dying every year by contaminated water, than by HIV, war, car accidents and malaria together. If a concern like Nestlé now comes and says, we have the solution. Pure Life is the solution. We are selling you the water from your own groundwater while we are polluting your local fountains – than this is a criminal act." Maude Barlow, UN-Chief Advicer for water 08/09 Sentence from the movie: The bottled life, [www.bottledlifefilm.com/index.php/berichte-und-materialien.html](http://www.bottledlifefilm.com/index.php/berichte-und-materialien.html)

"One bottle of Pure Life from Nestlé is more expensive than the daily income from most of the Nigerian people. One bottle of Pure Life is even more expensive than 1 liter of gas." John O. Egbuta, Advicer of the UNICEF office in Lagos/Nigeria



# WATER: COMMODITY OR HUMAN RIGHT? ROLE-PLAYING CARD: HUMAN RIGHTS

[www.bottledlifefilm.com/index.php/berichte-und-materialien.html](http://www.bottledlifefilm.com/index.php/berichte-und-materialien.html)

Nestlé is the biggest producer of bottled water in the USA and has fountains all over the country – also in Fryeburg (Maine). Daily 1 million liter of water are pumped out of the ground and transported with trucks to the bottling plant of Nestlé. For one truckload (30.000 liters) the concern pays 10 US-Dollar to the private owner. When Nestlé wanted to build a second pumping station, the community denied their request. Nestlé sued the community and the community won. But in the highest court Nestlé won.

[www.bottledlifefilm.com/index.php/berichte-und-materialien.html](http://www.bottledlifefilm.com/index.php/berichte-und-materialien.html)

“Vandana Shiva reports, that in Kerala [...] the state sold 1,5 million litre of water to Coca Cola. The consequence: After two months the groundwater level sank and lakes dried out. 400 women have been arrested for demonstranting against the privatization of water. Police ships are patrolling on the sold river Sheonath and arrest men and women, which who are fishing in the river, take a bath or wash their clothes. 100.000 people, mostly women, demonstrated against this until the privatization was cancelled. “

[www.staytuned.at/sig/0022/32933.html](http://www.staytuned.at/sig/0022/32933.html)

If people can only get water for their personal need, for drinking and washing, what must poor farmers do with their fields? They grow only a few plants on the field for their own need and sell the rest on the local market. How can poor farmers survive, if they have to buy water for irrigation but are not able to afford the water for their fields?



# WATER: COMMODITY OR HUMAN RIGHT? ROLE-PLAYING CARD: CORPORATION

## INFORMATION OFFICER OF A MULTINATIONAL CORPORATION FOR WATER

You are the manager of a multinational corporation that produces and sells bottled water. 40 percent of the entire sales volume of the company is earned by the worldwide sale of bottled water. In order to maintain or even increase sales volume, it is necessary to create a positive image in the public. Because of the fact that your company is spread out across the globe, it is necessary to adapt your marketing strategy to the particular needs of your customers. Read the background information. Search for arguments in favour of the worldwide distribution of bottled water. Try to think of positive arguments in order to persuade people who are against water bottles.

In order to find suitable arguments try to consider the following questions:

- Why do we have bottle water? Worthwhile or not?
- Is it sustainable?
- Which pros or cons does the plastic bottle industry have for the local community?

At the end you have to give a concluding statement answering the following question: Who does water belong to? Is it a human right or a commodity?

Who is the owner of water? Is water a public property or a product?

### Arguments

“Water is the most important raw material that our world still owns. The question is: should the normal supply of water for the general public be privatized or not? There are two different opinions. The one opinion held by the NGOs is that water should be declared a public right. This means that all people should have the right to have water. The other opinion states that water is food and therefore water should have a monetary value as all the other food. I personally believe that all types of food should have a value in order to raise people’s awareness that food is not free of charge. We should invest more time and find a solution for those people who do not have any access to water.”

Peter Brabeck: Chief of the Nestlé company and president of the administrative council

Passage from the movie “We feed the world”

The supply of drinking water in the third world is to 96 percent in the hand of the state. In Europe, 30-35 percent of tap water is lost through pipe and infrastructure, whereas in the third world 60-70 percent is lost and this is the biggest problem.

Peter Brabeck, CEO Nestlé 1997-2008, President of the Administrative Council

Passage of the movie “Bottled life”, <http://webdoku.bottledlifefilm.com>

The answer of Peter Brabeck to the question of conflicts concerning the exploitation of natural springs in the USA is as follows:

“We know that very well. We have intensive discussions with them. In the USA it differs from city to city. In some cities people are very happy that we build factories there or that we add natural springs. In other cities there are many discussions and different opinions as to whether we interfere with nature or not.”

Peter Brabeck, CEO Nestlé 1997-2008, President of the Administrative Council

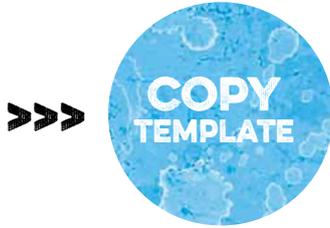
Passage of the movie “Bottled life”, <http://webdoku.bottledlifefilm.com>

“The acquisition and the utilization of natural springs occurs on behalf of the resident population. We are protecting those springs from fertilizers used in agriculture in order to maintain the best quality for our products. The Nestlé corporation pays money to the farmers in the villages so they do not use fertilizers and therefore the water quality remains intact.”

Peter Brabeck, CEO Nestlé 1997-2008, President of the Administrative Council

[www.blick.ch/news/wirtschaft/es-gibt-kein-menschenrecht-auf-wasser-fuer-swimmingpool-id1743192.html](http://www.blick.ch/news/wirtschaft/es-gibt-kein-menschenrecht-auf-wasser-fuer-swimmingpool-id1743192.html)

Our corporation creates job security for the region – very often in structurally weak areas. This leads not only to an economic boost for the region, but also to increased buying power and to an improvement in the standard of living for the people in that region.



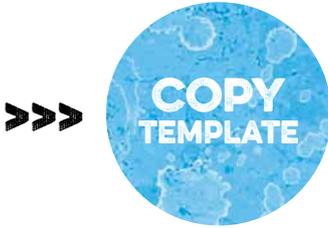
# **WATER: COMMODITY OR HUMAN RIGHT? ROLE-PLAYING CARD: CORPORATION**

Our company places value on sustainability. On the one hand we successfully minimized the consumption of water and on the other hand we are trying to improve continually the methods in the production of plastic bottles. The improvements in quality are not only important for the environment but also for clients: the plastic bottles are getting increasingly lighter and stronger.

It is a positive aspect in our western civilization that it is possible to have different opinions, views and positions. Many reports in the media, however, are strongly biased. Therefore the topic is not discussed broadly enough but only one-sided.

Water for personal use should be a human right but beyond that people should pay for it: irrigating fields, watering the garden, filling a pool etc. Only when people realize that water costs money and that water is a product they will learn to save water.

Our company has the ability to respond to consumer needs. The development of our products is based on the needs of our consumers. Lately we have developed new classy mineral waters for an exclusive clientele. Those mineral waters offer an extraordinary high water quality and an intense taste. They are coming from isolated South Sea islands or from Scandinavian glaciers or from springs on the roof of Japanese mountains, the rain clouds of Tasmania or from the Scottish highlands. Generally one can say that our products have a high impact on everybody's health because they contain essential mineral nutrients. Customers can read the contents on the bottle label. Customers suffering from high blood pressure could opt to just drink low-sodium water. Ambitious athletes could buy water that contains magnesium. With the right choice of water people could cover the daily demand of mineral nutrients. Especially in developing countries people do not have access to clean water. Therefore, we offer those people access to clean water and prevent that people fall ill.



# WATER: COMMODITY OR HUMAN RIGHT? ROLE-PLAYING CARD: ENVIRONMENT

## REPRESENTATIVE OF AN ENVIRONMENT ORGANIZATION

You have been working for many years for an environmental organization for many years and one key aspect of your work revolves around “water”. You have to deal with environmental pollution because of plastic bottles. Moreover, you advocate worldwide environmental protection and you try consistently to document cases of abuse and to publicize them. Due to pollution and the destruction of environments worldwide you are fighting for an International Agreement on Environmental Protection.

Try to read the background information and search for reasons which that can illustrate the problem of environmental pollution through the use of plastic bottles. Furthermore, try to illuminate which steps should be implemented in order to avoid bigger damage to the environment.

In order to find suitable arguments use the following questions:

- Why do we have bottled water? Worthwhile or not?
- What about sustainability?
- Which pros or cons does the plastic bottle industry have for the local community?

At the end, you have to make a concluding statement regarding the following question: Who does water belong to? Is it a human right or a commodity?

Who is the owner of water? Is water public property or a product?

### Arguments

The water problem has to be seen in a global context and in correlation with further environmental problems as for example climate change. Due to climate change the water situation in low-moisture regions gets more difficult. The increase in drought periods is responsible for the increase of bad crops. Because of a lack of water, people and particularly children are drinking polluted water which causes many illnesses.

“Even springs and wells dry up if one draws too much from them too often.” (Demosthenes, Staatsmann Athens 384-322 v. Chr.)

Worldwide, 80 percent of municipal untreated sewage ends up in lakes, rivers or the ocean. In less developed countries the situation is even more problematic.

Source: [www.unesco.de/weltwasserbericht4\\_kernaussagen.html](http://www.unesco.de/weltwasserbericht4_kernaussagen.html)

“About one quarter of the utilized water worldwide is ground water and three quarters are removed from rivers and lakes. While the supply of drinking water in Europe is taken mostly from surface water, rural areas in Africa and Asia take their drinking water supply from ground water. Nature usually is able to compensate for the ground water that was removed. But if too much ground water is removed for a prolonged time, groundwater levels will sink. “

[www.unesco.de/weltwasserbericht4-kernaussagen.html](http://www.unesco.de/weltwasserbericht4-kernaussagen.html)

“Until now Sidcup has been a nice urban district somewhere close to the British metropolis. Since a few days the name of this district is well known and published in all English newspapers – synonymous for a big PR-disaster of the global corporation Coca-Cola. On Monday the beverage manufacturer that protects the secret of how this brown soft drink is produced had to publish an extremely embarrassing confession.

The mineral water Dasani that is sold for 95 pence per half a liter consists of tap water taken from the urban district of Sidcup. Ever since that time Coca-Cola has a bad reputation. The Times headline read “It’s the real thing....Coke’s tap water from Sidcup”. The Independence has compared the price of Dasani- bottled water with the price of half a liter tap water in Sidcup: 0.03 pence.”

[www.spiegel.de/wirtschaft/peinliches-gestaendnis-coca-cola-verkauft-leitungswasser-a-288843.html](http://www.spiegel.de/wirtschaft/peinliches-gestaendnis-coca-cola-verkauft-leitungswasser-a-288843.html)

“Bottled water costs two thousand times more than tap water. Can you imagine buying 2000 more for something?”

The story of bottled water: [www.youtube.com/watch?v=cnxuk6YK8OQ](http://www.youtube.com/watch?v=cnxuk6YK8OQ)



# WATER: COMMODITY OR HUMAN RIGHT? ROLE-PLAYING CARD: ENVIRONMENT

How can we explain the fact that bottled water costs 500 times more than tap water of the same quality? How is it possible that multinationals like Nestlé earn several millions in countries with good and sufficient drinking water? Supported by excellent marketing strategies and pictures, multinationals let consumers believe, that bottled water is healthier than tap water. Try to think of the commercial for “Römerquelle”!

With the amount of plastic bottles that people in the USA buy per week the globe could be orbited five times.  
The story of bottled water: [www.youtube.com/watch?v=cnxuk6YK8OQ](http://www.youtube.com/watch?v=cnxuk6YK8OQ)

“The vice president of Pepsi announced: The biggest enemy is tap water. They want to make us believe that tap water is unenjoyably and bottled water is the best alternative. In many places tap water is contaminated because of impure industries as for example the production of plastic bottles.”

The story of bottled water: [www.youtube.com/watch?v=cnxuk6YK8OQ](http://www.youtube.com/watch?v=cnxuk6YK8OQ)

For the production of plastic bottles we need oil and energy. Even more resources are needed for the transport of these plastic bottles. But what happens in the end with the empty plastic bottles? 80 percent of them end up in deposits where they remain for a couple of years. A specific number though is burned and this results in toxic emissions. The rest of these empty plastic bottles get recycled. The biggest problem though is the fact that a great deal of these recycled bottles end up as waste in countries such as India.

Source: The story of bottled water: [www.youtube.com/watch?v=cnxuk6YK8OQ](http://www.youtube.com/watch?v=cnxuk6YK8OQ)

The return rate of PET-bottles in America is up to 40 percent. In many poor countries plastic bottles are not collected at all and not burned in incinerators equipped with special filters. They pollute the environment because they are not degradable.”

[www.filmeeinewelt.ch/deutsch/files/40212.pdf](http://www.filmeeinewelt.ch/deutsch/files/40212.pdf)

With regard to the health benefits of bottled water enriched with minerals, many studies indicate that the amount of mineral nutrients that people need per day is covered by the daily amount of food. An established fact is, though, that tap water is strictly controlled whereas bottled water is not..

# KNOW YOUR LIFESTYLE

Sustainable Consumption in

2nd Chance Education

