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# Sustainability and Didactics

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## ESD = Education in Sustainable Development

The teaching of ESD is undisputed and important. However, there are three major didactic problems:

- The field is extremely broad and one quickly gets lost in it. It covers the whole of life (next slide). However, young people like to concentrate on a single, clear topic.
- ESD is mainly about technical knowledge, but competences for action are hard to find. However, young people would like to act and understand in action.
- The concrete possibilities of the individual are often small. That is why sustainability must not degenerate into a counterproductive moral lecture with alibi exercises.



# SUSTAINABLE DEVELOPMENT GOALS

**1 NO POVERTY**



**2 ZERO HUNGER**



**3 GOOD HEALTH AND WELL-BEING**



**4 QUALITY EDUCATION**



**5 GENDER EQUALITY**



**6 CLEAN WATER AND SANITATION**



**7 AFFORDABLE AND CLEAN ENERGY**



**8 DECENT WORK AND ECONOMIC GROWTH**



**9 INDUSTRY, INNOVATION AND INFRASTRUCTURE**



**10 REDUCED INEQUALITIES**



**11 SUSTAINABLE CITIES AND COMMUNITIES**



**12 RESPONSIBLE CONSUMPTION AND PRODUCTION**



**13 CLIMATE ACTION**



**14 LIFE BELOW WATER**



**15 LIFE ON LAND**



**16 PEACE, JUSTICE AND STRONG INSTITUTIONS**



**17 PARTNERSHIPS FOR THE GOALS**




**SUSTAINABLE DEVELOPMENT GOALS**

## Division into the areas of society and environment

### Society

- 1 No poverty
- 2 No hunger
- 3 Health and well-being
- 4 Quality education
- 5 Gender equality
- 6 Clean water and sanitation
- 8 Decent work and economic growth
- 9 Industry, innovation and infrastructure
- 10 Fewer inequalities
- 16 Peace, justice and strong institutions
- 17 Institutions Partnerships to achieve the goals

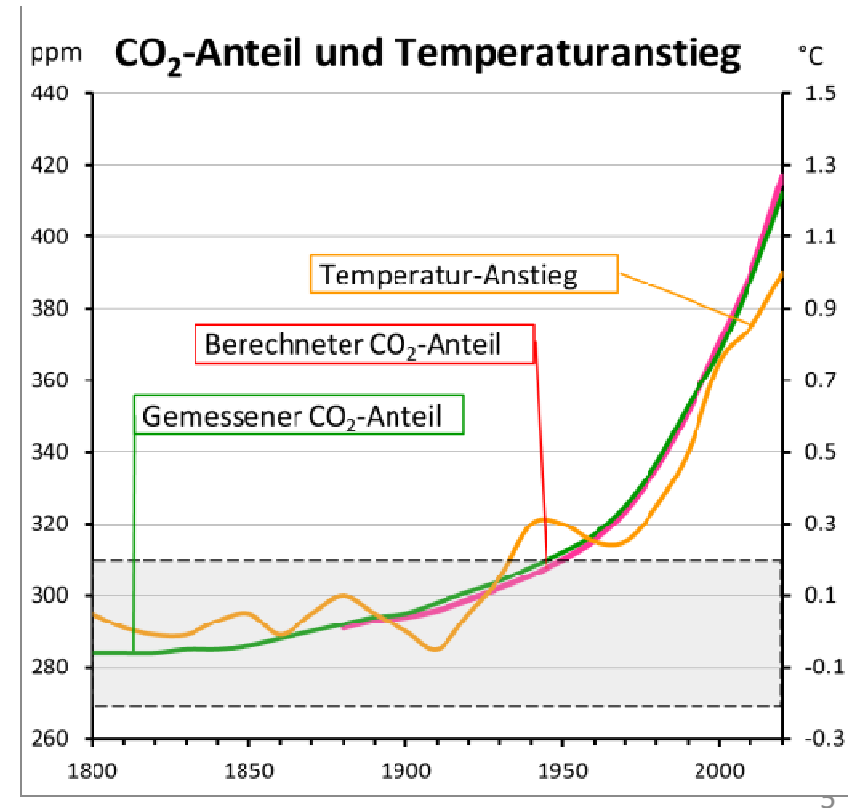
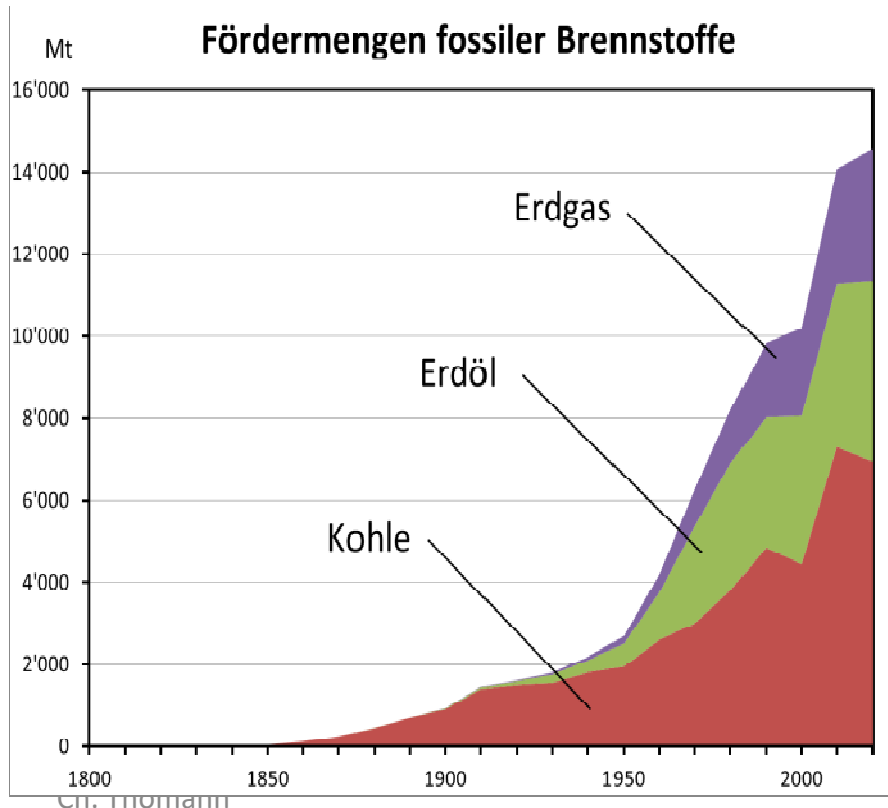
### Environment

- 7 Affordable and clean energy
- 11 Sustainable cities and communities
- 12 Sustainable consumption and production
- 13 Climate protection measures
- 14 Life under water
- 15 Life on land

## The most urgent problem is global warming:

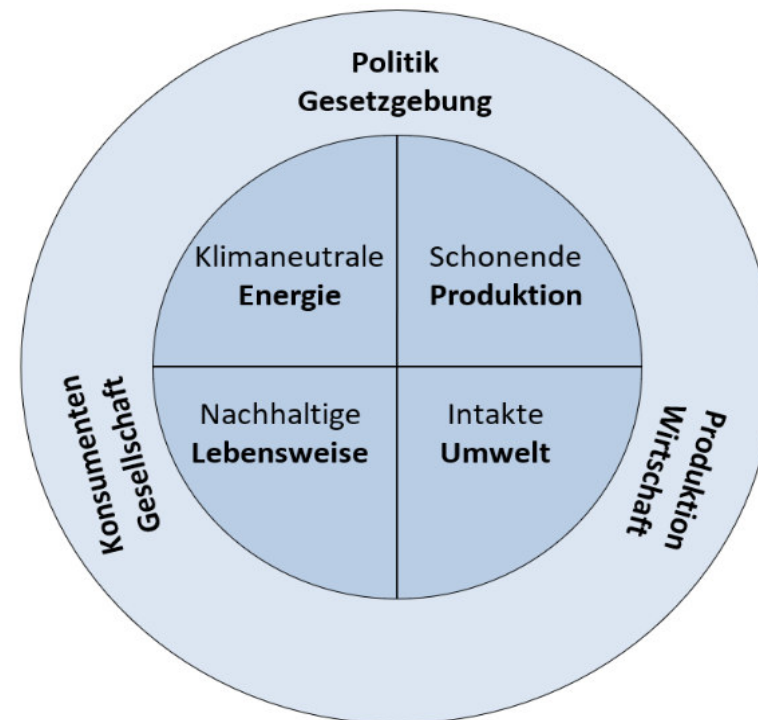
The left diagram shows global fossil fuel production.

The diagram on the right shows the **calculated** and **measured** CO<sub>2</sub> content, if half of the CO<sub>2</sub> from combustion remains in the air.



## Project for a series in FOLIO on the topic of environment

Limitation to the 4 areas of environment. The goal is not only specialist knowledge but also useful competences for action.



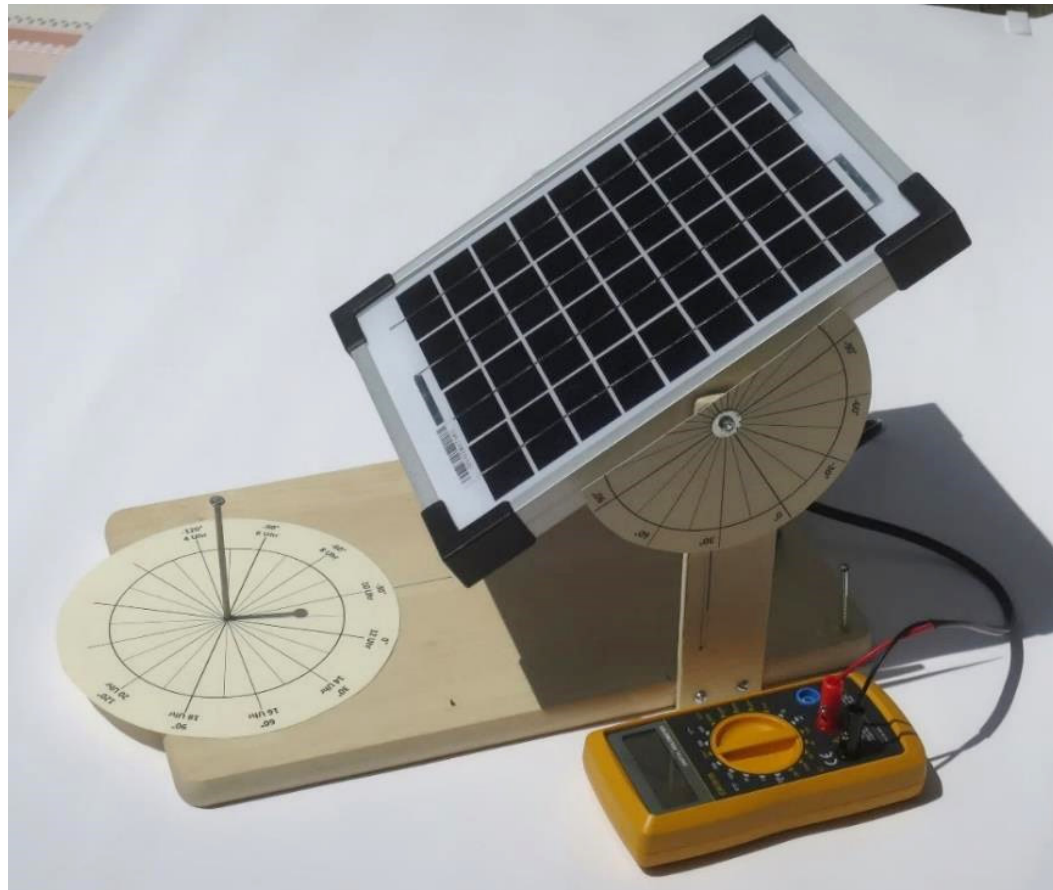
## The following are ideas for the didactic implementation of the 4 areas:

- Climate-neutral **energy**
- Resource-saving **production**
- Intact **environment**
- Sustainable **way of living**

Useful competences are sought.

## Competence Energy

Efficiency of a solar cell in different orientations to the sun

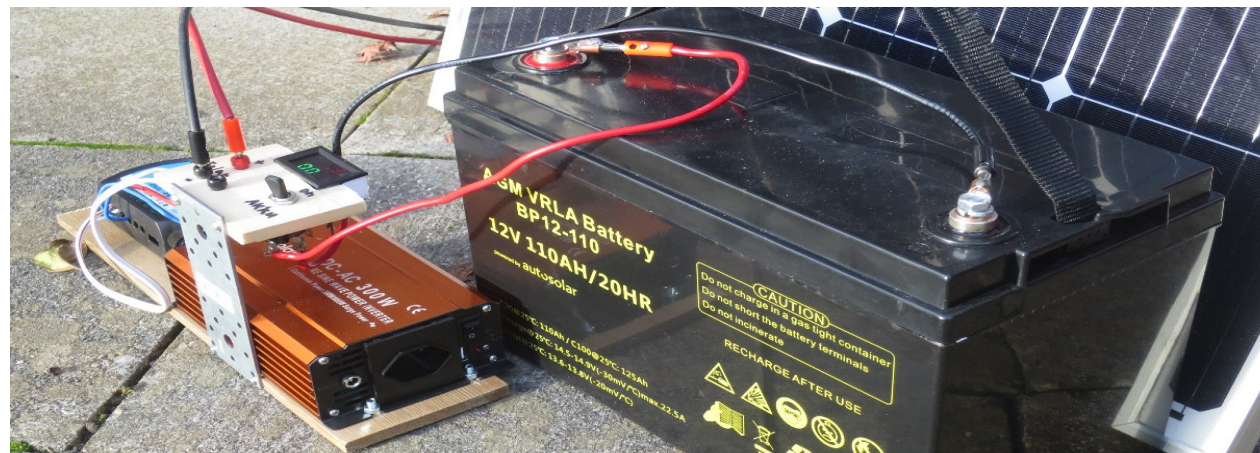




## Determine what you can do with 1 kWh of energy

How long can you

- work at the computer?
- shower?
- leave the light on?
- blow dry your hair?
- watch TV?
- How much spaghetti can you cook?
- How far can you drive with an e-car?
- How far can you ride an e-bike?
- How high can you ride in a lift?



Solar emergency power device with 1.3 kWh capacity

## Competence Production

The decisive factors for sustainable production are the **materials** required and the **energy** to be needed. The information on this is often difficult to obtain.

Research would be interesting here:

- Cement/concrete
- Iron/steel
- Plastics
- Batteries
- Solar cells

Savings through recycling should also be investigated.



Bild: ffe.de

## Competence Environment

Frustrating in this area are the major environmental problems that we can hardly influence:

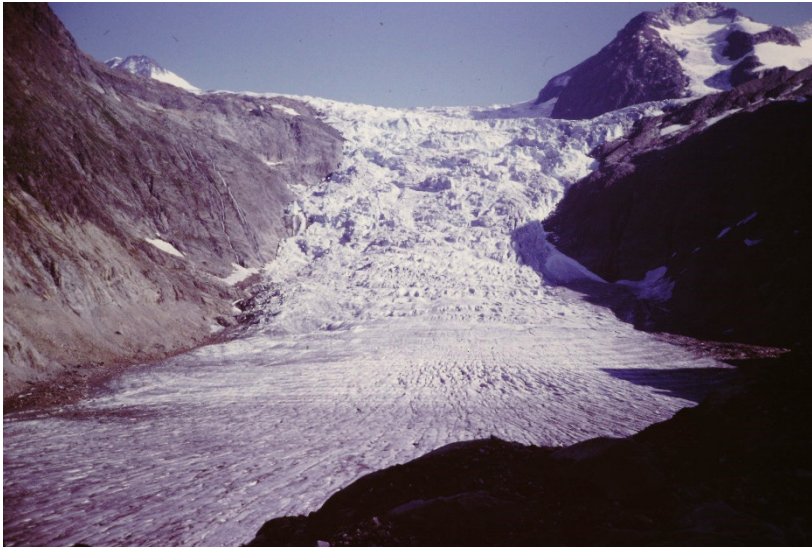
- Deforestation
- Plastic pollution
- Overfishing of the oceans
- Acidification of the oceans
- Global warming
- Destruction of habitats worth protecting

That is why this is a matter of **political understanding** and **balancing of interests**.

## Example Trift glacier

Should a water reservoir be built here?

Situation 1973



Situation today



Bild: Kraftwerke Oberhasli AG

The weighing of interests is much more difficult in the case of:

**Global warming** or **nuclear energy**?



## Competence Way of Living

Here, in contrast to the area of environment, there are many concrete actions:

Always the latest?



Repair or throw away?



**An important source of information and examples is:**



BNE in der Berufsbildung

[www.education21.ch](http://www.education21.ch)



#### Aktuell

- ABU-Lerneinheit "Schokolade - Genuss mit bitterem Beigeschmack"
- ABU-Lerneinheit "Zero Waste - Alltag ohne Abfall"
- Orientierungshilfe Nachhaltige Entwicklung in der Berufsbildung
- Gastbeitrag bei öbu: Nachhaltigkeit beginnt bei den Lernenden
- Nachhaltigkeit in der Berufsbildung (Artikel im BerufsbildungsBrief Kanton Bern)
- Praxiszeitschrift ventuno Sonderausgabe zur Berufsbildung
- Praxiszeitschrift ventuno | Gesundheit - Bewegung - Natur
- Lernmedien
- Themendossiers
- Webdossier für den Unterricht

# Guidance on sustainable development in vocational education and training

Bern, 15 December 2020, Extract - Page 10

Die auf dem Analysetool gestützte Nachhaltigkeitsanalyse des jeweiligen Berufs erfolgt in drei Schritten, die es ermöglichen, berufsspezifische und stufengerechte Akzente zu setzen:

1. Relevanz für den Beruf klären
2. Handlungsoptionen identifizieren
3. Nachhaltige Entwicklung für den Beruf konkretisieren

**Abbildung 2: Aufbau des Analysetools**

	Dimension Wirtschaft	Dimension Gesellschaft	Dimension Umwelt
<b>Relevanz</b> ?	Themen: ▪ Wirtschaftlichkeit & Wertschöpfung ▪ Innovation & Bildung ▪ Mobilität & Logistik	Themen: ▪ Arbeitsbedingungen ▪ Gesundheit & Wohlbefinden ▪ Chancengleichheit	Themen: ▪ Biodiversität, natürliche Ressourcen & Materialien ▪ Klima & Energie ▪ Umweltbelastung & Abfall
<b>Handlungsoptionen</b> ➡	Handlungsoptionen Wirtschaft	Handlungsoptionen Gesellschaft	Handlungsoptionen Umwelt
<b>Konkretisierung</b> ✓	Beispiele für die Konkretisierung in den Bildungserlassen	Beispiele für die Konkretisierung in den Bildungserlassen	Beispiele für die Konkretisierung in den Bildungserlassen
Nachhaltige Entwicklung als Querschnittsaufgabe			

Quelle: [https://www.sbfi.admin.ch/dam/sbfi/de/dokumente/2021/01/orientierungshilfe.pdf.download.pdf/orientierungshilfe-nachhaltige-entwicklung\\_d.pdf](https://www.sbfi.admin.ch/dam/sbfi/de/dokumente/2021/01/orientierungshilfe.pdf.download.pdf/orientierungshilfe-nachhaltige-entwicklung_d.pdf)

***Thank you for your attention***

