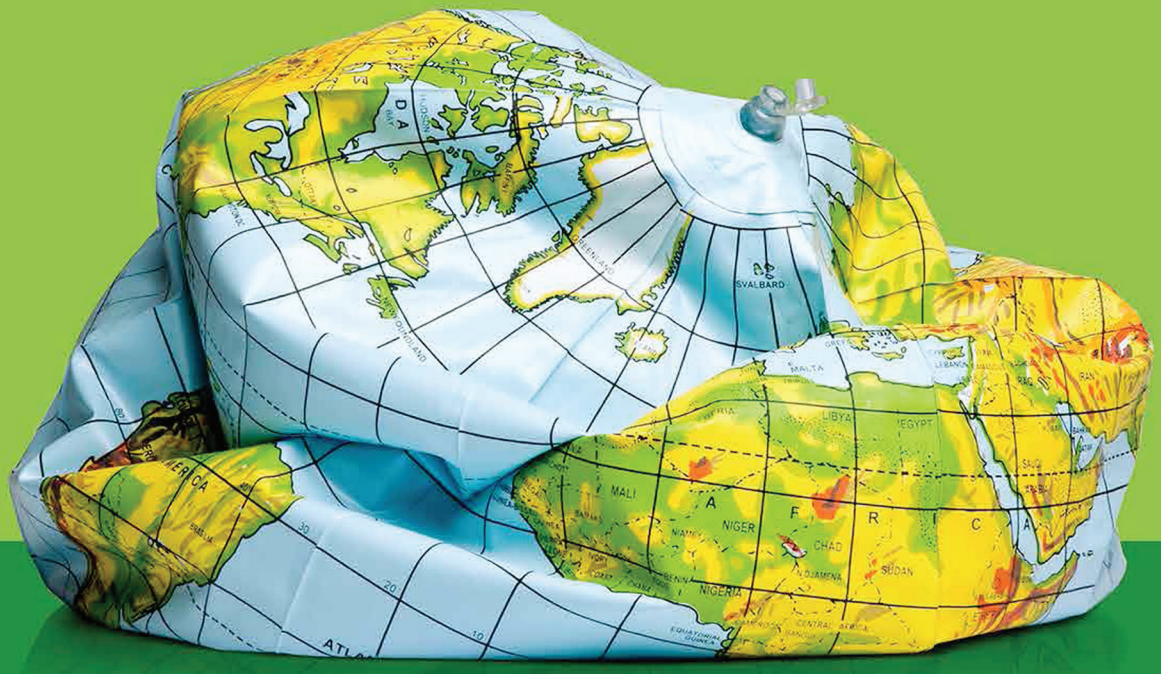
Bigarren Hezkuntza
Lehen Zikloa

2015
2016

Ez ditzagun ito



Geure aztarna ekologikoak planetako baliabideak agortzen ditu eta gizateria garatzeko aukerak ere murrizten ditu.

UTZI ZURE AZTARNA
POBREZIAREN AURKA
Zurekin, bat gehiago

sed Solidaridad | Educación | Desarrollo
PROYDE
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EDIFICANDO Comunidad de Nazaret
PROCLADE YANAPAY

Ecological Footprint and Sustainable Development

Fishing in Kossou Lake (Ivory Coast). Source: SED

TEACHER INDEX CARD

Subject

English language (ESO, ciclo 1º)

Aims

1. Analyzing texts and pictures related to the "Ecological Footprint".

2. Using online tools in English language to think about our impact on the environment.

Contents

Concepts	Proceedings / Procedure	Attitudes
• Ecological Footprint • Sustainable Development.	• Reading and comprehension. • Assimilation of English documents (texts, pictures). • Making of reports/posters to synthesize ideas	• Sensitize about the impact of our lifestyle on the Earth. • Take actions to reduce the Ecological Footprint. • Promote Sustainable Development

Skills Programming

Skill	Details	Activities
Language Knowledge	Reading and comprehension of English documents. Learning vocabulary.	1, 2 , 3, 4, 5
Mathematical ability	Assimilation of statistical data and graphics	2, 3, 4
Connections with the environment	Analysis of the impact of our consumption pattern on the Earth	4
Communication technology	Finding information about Ecological Footprint (Internet). Using social networks as educational tools	1, 4, 5
Social and civic ability	Reflection about Sustainable Development	1,3,4,5
Cultural and artistic ability	-	-
Learning ability	Making thematic reports or posters	2, 5
Personal autonomy	Control of personal involving in group tasks	4, 5

Materials

- Pictures and documents about the Ecological Footprint (different sources).
- An online Footprint calculator: http://footprintnetwork.org/en/index.php/GFN/page/calculators/

Timing

SESIÓN A	SESIÓN B
• Activity 1 • Activity 2 • Activity 3	• Activity 4 • Activity 5

STUDENT ACTIVITIES

Activity 1. Consumption of resources in the world

Look at the picture[1] and complete the exercises:

If overpopulation isn't the problem, what's the problem them?

Try to imagine the differences between rich and poor people through their lifestyle characteristics, and complete:

	Goods consumption	Waste materials
Rich Countries	• • • • •	• • • • •
Poor Countries	• • • • •	• • • • •

Find complementary information about Ecological Footprint on the Internet

1 Source: http://www.motherjones.com/slideshows/2012/08/economics-comics-dark-money/economix-ecological-footprint-overpopulation

Activity 2. Ecological Footprint and Biocapacity[2]

Ayaou Sokpa – A traditional village in Ivory Coast. Source : SED

How can we measure the impact of our lifestyle?

Ecological Footprint

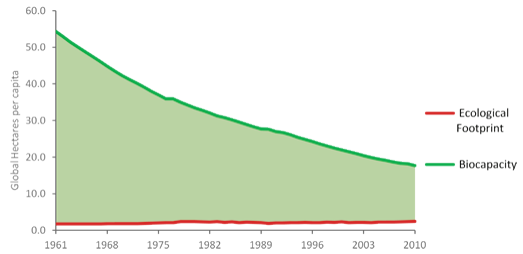
A measure of how much area of biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates, using prevailing technology and resource management practices. The Ecological Footprint is usually measured in global hectares. Because trade is global, an individual or country's Ecological Footprint includes land or sea from all over the world.

Biological Capacity or Biocapacity

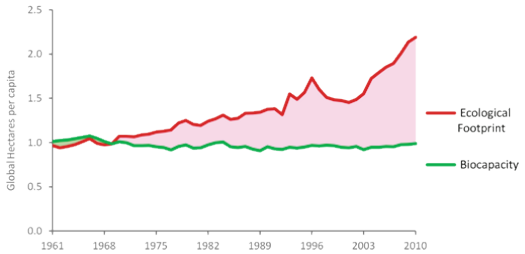
The capacity of ecosystems to produce useful biological materials and to absorb waste materials generated by humans, using current management schemes and extraction technologies. "Useful biological materials" are defined as those demanded by the human economy. Hence what is considered "useful" can change from year to year (e.g. use of corn (maize) stover for cellulosic ethanol production would result in corn stover becoming a useful material, and thus increase the biocapacity of maize cropland). Biocapacity is usually expressed in global hectares.

Figures from the next page track the per-person resource demand Ecological Footprint and Biocapacity in different countries since 1961. Biocapacity varies each year with ecosystem management, agricultural practices (such as fertilizer use and irrigation), ecosystem degradation, and weather, and population size. Ecological Footprint varies with consumption and production efficiency.

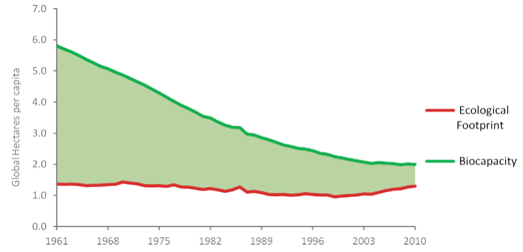
2 Source: http://www.footprintnetwork.org/en/index.php



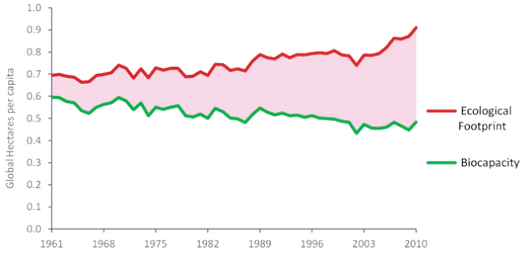
BOLIVIA



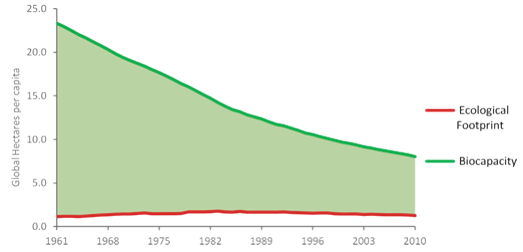
CHINA



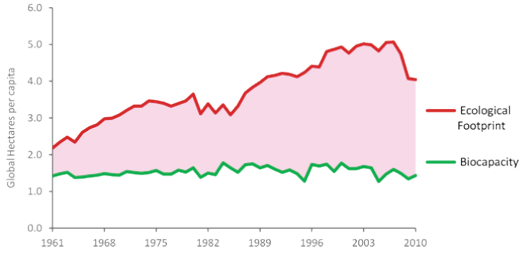
CAMEROON



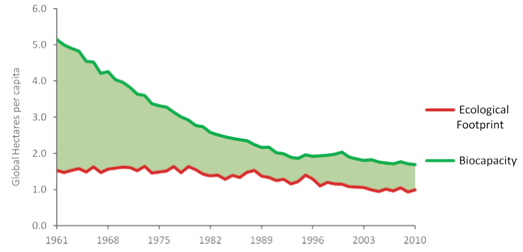
INDIA



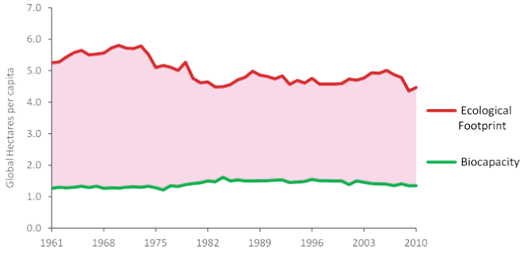
CENTRAL AFRICAN REPUBLIC



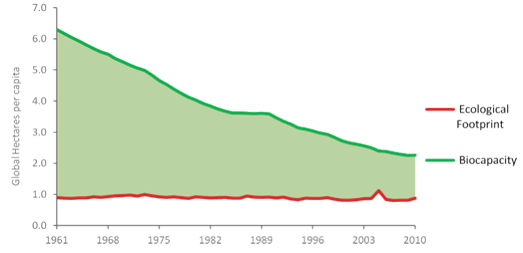
SPAIN



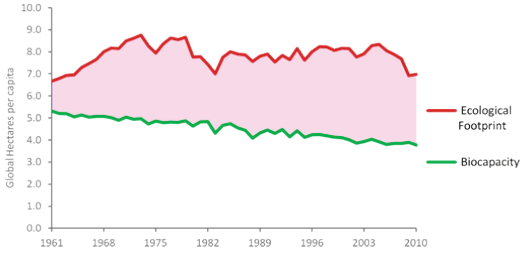
IVORY COAST



UNITED KINGDOM



MOZAMBIQUE



UNITED STATES OF AMERICA

A. Identify in the text factors that vary each year the Biocapacity and the Ecological Footprint:

Factors affecting Ecological Footprint

Factors affecting Biocapacity

B. According to the graphic of each country, complete the table:

	Ecological Footprint, 2010 (Global Hectares *per capita*)	**Biocapacity, 2010** (Global Hectares *per capita*)
Spain	*Ej: 4.4 Hectares*	*Ej: 1.3 Hectares*
Mozambique		
India		
Bolivia		
China		
United States of America		
Cameroon		
Ivory Coast		
United Kingdom		
Central African Republic		

C. Classify all the countries of the previous graphics according to their economies:

Rich Countries	Emerging Economy Countries	Poor Countries

D. Find the answers in the graphics:

- The country leaving the major Ecological Footprint: .....
- Two countries showing increasing Ecological Footprint: ..... and .....
- A country with a similar Ecological Footprint to Spain: .....
- Three countries with similar Ecological Footprint to India: ..... and ..... and .....
- Countries showing decreasing Biocapacity: .....

E. Answer the following questions:

- Look at in the graphics the "green area" or the "pink area". Whichone does represent a better impact on the environment? Why?
- How is the high Ecological Footprint equilibrated in the Rich Countries respect to their low Biocapacity?
- What about the decreasing tendency of Biocapacity in the Poor Countries?

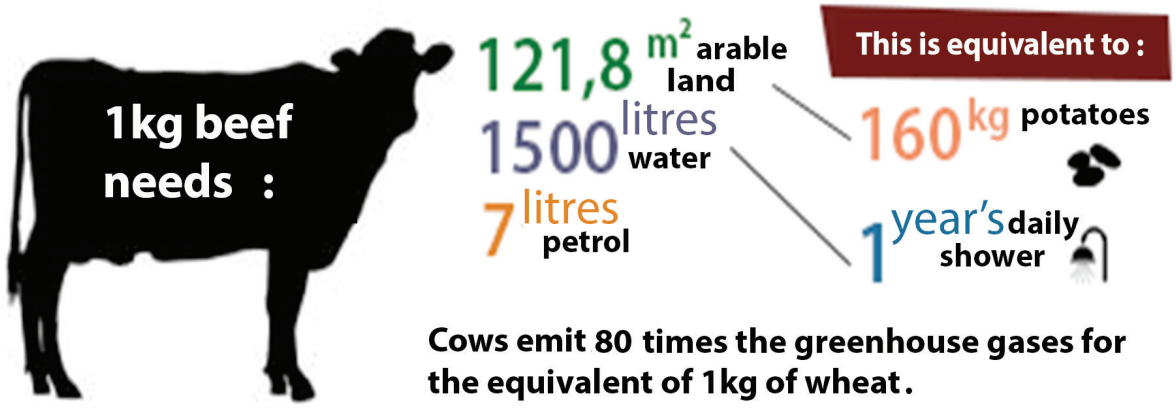
F. Write a text with your own conclusions (10 sentences)

Actividad 3. The impact of eating meat.

Read the following text and watch the picture:

Plant proteins are as beneficial to you as to the Planet[3]

- Plant proteins present in quinoa, significantly reduce your own ecological footprint. Quinoa is an excellent alternative source of protein that can replace the consumption of meat or fish, both with a high ecological impact.
- Did you know that livestock are responsible for 18% of the greenhouse gas emissions that cause global warming, which is even higher than that of cars, planes and all other forms of transport combined? (Food & Agricultural Organisation of the United Nations, 2006).
- The meat industry is a major carbon emitter. The only way to reduce its ecological footprint is to reduce meat consumption.
- The meat industry is also water-intensive, which will become even scarcer in the coming decades.
- Battery-reared animals are mostly fed with GMO grain, contributing to the deforestation of the Amazon rainforest.
- Eating welcome alternatives to meat helps to keep our health and environment safe!



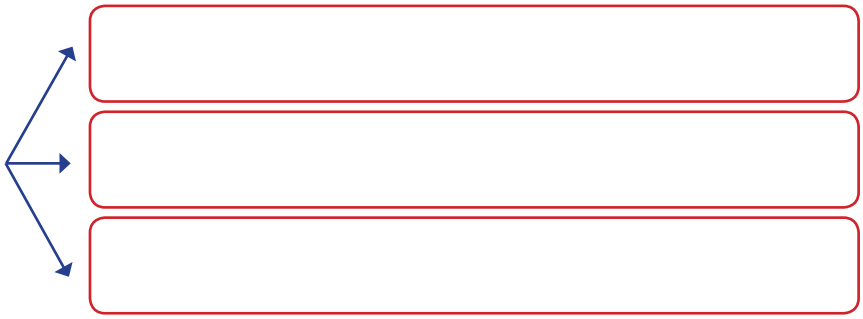
A. Find on the Internet the meaning of:

- Quinoa
- GMO
- Unknown words (online dictionary, as wordreference)

3 Source: http://quinolababy.com/en/limiter-lempreinte-energetique-2/

B. According to the text and picture, complete:

Three reasons to reduce meat consumption



C. True or false.

T	F	
		No plant protein can replace the consumption of meat or fish.
		The water consumption footprint to produce 1 kg of beef is equivalent to one year's daily shower.
		Greenhouse gas emissions provoked by all the transport media are higher than that of the livestock.
		A cow produces 1500 litres of water a year
		Reducing meat consumption is the only way to reduce the Ecological Footprint of the meat industry.

Activity 4. My personal Footprint4

Look at the picture. There are several Ecological Footprint calculators on the Internet, which allow us to check the impact of our lifestyle on the environment.

In groups of 4-5 persons, calculate your personal Footprint:

- Click on http://footprintnetwork.org/en/index.php/GFN/page/calculators/
- Select as your location "Italy"
- Take the quiz
- Analyze the results. How many Planets like the Earth do you need to maintain your lifestyle (comparing with the picture)?

Talk about your areas of resource consumption, and how can you tread more lightly on the earth

4 http://footprintnetwork.org/en/index.php/GFN/page/calculators/

Activity 5. The future we all want

Read the following text

The Future We All Want[5]

How can we help societies to move towards the direction of using natural resources wisely? The challenge is huge and we need to work alongside both government and companies. But we, as citizens, can do our part. Think it over!

1. Consumerism is a temptation and a very bad habit. It is one of the major factors that contribute for the shortage of natural reserves on the planet. Avoid replacing unnecessarily devices that aggregate high technology (mobiles for example) and reduce the consumption of disposable products.
2. Fluorescent lamps and LED lamps (light emitting diode) are economic, use less energy and last longer than incandescents. Choose appliances marked as class A. They are more efficient in using energy.
3. Cellulose Paper Manufacturers consume a huge amount of water and energy. Thus, print what is really important and try to use both sides of the paper. Recycled papers must be used whenever possible.
4. Gather together with your neighbors and people who live in your neighborhood. Ask politicians in your city for selective waste collection, recycling bins, and of course demand recycling.
5. Consumption of energy by an electric shower is high. Thus showering must last no more than 10 minutes. This way you will save water and energy. Gas water heaters should be avoided as they emit greenhouse gases.
6. Be a responsible consumer. Look for information on companies and try to find out whether they have committed environmental crimes. Sustainable attitudes are associated to recycling water, investment in innovative technology to reduce energy consumption and biodegradable products.
7. Practise citizenship wisely. Use the social networks to raise your voice. Demand of politicians and companies in your city, in your state and in your country to make sure that they are meeting all the necessary requirements for the conservation of biodiversity, hydric resources and soil in such a way that the great goal can be finally reached- sustainable development.
8. Use public transportation. Catch a lift with your friend and give a lift. Demand high quality means of transportation - buses, trains and subways. If you are not going too far use your bike or go on foot. It´s better for your health and the environment.

In groups of 4-5 persons, choose one of these possibilities:

- **Option 1:** Make a poster explaining how can we reduce the Ecological Footprint (you can take ideas from the text)
- **Option 2:** Organize a campaign on your favorite social networks in order to take actions to reduce Ecological Footprint.

5 Source: http://www.skepticalscience.com/Brochure-on-sustainability.html