iEARN Project

**Ocean pollution**

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**1. Introduction**

We chose the topic "ocean pollution", because we thought it would be interesting and we hoped to find out more about how it is in Germany and in other countries.

With working with this topic, we want to find out what consequences ocean pollution has, what Germany does against it and what everyone of us could do. We also wanted to discover what Germans, and what the people in the other countries know about it and where the differences in the comprehension of the people in different countries are.

To reach this we explained what people in Germany know about ocean pollution first. Then we wrote down the knowledge of Canadians and the knowledge of an person from Syria about this topic.

After that we described the ocean pollution in Germany and the consequences of the destruction. Then we had a closer look at the consequences for the environment, for the animals and for the people.

Furthermore, we looked what Germany does against the ozean pollution and what everyone can do against it.

**2. Ocean pollution**

**2.1 Knowledge**

People in different countries often have completely different knowledge about some topics. Often it is not only the amount of knowledge, but also the kind of knowledge.

**2.1.1 Knowledge of Germans**

We don´t know exact things about ocean pollution. We just know, that we use a lot of plastic and that that is bad for the environment.

One thing, many Germans know, is that there are many “islands” of trash. The biggest island is nearly as big as Texas. This island of trash is in the Atlantic ocean.

The most people who live in Germany know much about the consequences. We know that animals get hurt and die, that many plants die and many species of animals and plants cease.
Furthermore, we know about the climate change, and that ocean pollution impinges on it.

**2.1.2 Knowledge of people in other countries**

"Generally, people don't have lots of specific details, but most people immediately mention the 'huge plastic garbage island' in the Pacific Ocean. Some people talk about the changing pH, or acidification of the oceans. The general feeling is that if the oceans get too acidified, the amount of basic nutrients that support the whole oceanic food system/cycle will start to decline and the ecosystem will collapse. If the plankton dies out, sea life cannot be supported. Some people also mention rising sea levels, but I think that is more about global warming and not directly about pollution of the oceans (although pollution is causing some or most of the climate change). “

*Person from Canada*

We also asked Shalan, a refugee from Syria, what he knows about ocean pollution. He said, that he didn´t know much about it, he only knew, that we should reduce the exhaust fumes to protect the environment.

**2.2 Ocean pollution in Germany**

Every year ten million tons of plastic gets in the ocean. 20.000 tons of this rubbish get in the north sea every year. 80% of this rubbish are bags, canisters and PET-bottels and 75% of that consist of plastic and polystyrene. Therefore, many animals die an agonizing death in the North Sea every year.

 **2.3 Consequences**

All life came from the ocean. Therefore, the ocean is one of the most important living spaces.

The ocean supplies us with food and energy. Another function of the ocean is that the climate gets affected by it. Because of that, it is very important that we save the ocean, so that we can stop the climate change.

However, the modern human has polluted the ocean in a very short time, which causes destruction of the living room of many animals.

More than 6.4 tons of garbage get in the ocean annually/every year. This garbage passes the rivers into the ocean. Therefore, the global pollution of the ocean increases. Especially the Baltic Sea and the Mediteranean Sea get polluted by the waste water, which comes from coast cities, seaside resorts and tourist centers.

Furthermore, the oceans are polluted by oil tanker, which are dumping chemical and radioactive scraps. This happens at the expense of the animals, which are living in the oceans.

Another point is, that some animals mistake the colored plastic of the plastic bags, PET-bottles, tooth brushes etc., which make up the majority of the garbage in the ocean, with their food. They eat this plastic rubbish. Many animals get internal injury because of that and many of them die. Therefore, more and more frequent corpes of sea birds with plastic things in there stomach are found every year. The animals suffocate, suffer deadly blockage or starve with fully belly. The stomach contents of dead fulmars are in the meantime an approved prove of the soiling of our seas. Scientists found out, that 93% of the fulmars had plastic parts in their stomach.

Oil tanker destroy plancton too, because the oil tanker produce toxic substance. Plancton produces most of the oxygen, which we need to live. When much plancton gets destroyed, it can´t produce this oxygen anymore.

Furthermore, many fishes eat toxic things. This toxic substance will be ushered into the human food chain. Therefore, there is an increased risk for the health of humans, which causes increased costs for health care.

Beside the health menaces for person and animal the rubbish in the ocean also has economical consequences. Tourism areas are threatened, beaches must be cleaned constantly, the garbage gets caught regularly in ship screws and fishing nets, Furthermore, the agriculture suffers from dirty pastureland in coastal heamess.
The soiling of our seas leads to huge economic damages every year – completely apart apart from divers accidents by scattered rubbish under water and injuries or illnesses by medical rubbish on beaches ans in seas.

Other factors for the destruction in the oceans are: fertilizer, metal, dilute acid, rise of the temperature, hunting, military and illegal waste disposal. These factors can lead to a dead sea, because the ocean can not cure itself.

Therefore, it is very important, that we minimize the ocean pollution, so that the ocean can get saved.

**2.4 Countermeasures of Germany (and other countries)**

**2.4.1 Projects**

There are many projects in Germany and also in other countries which approach ocean pollution.
The most projects are projects of special organizations.

One of those project is called “Fishing for Litter”. It got started by the organization “KIMO”, which stands for “Kommunenes Internajonale Miljoorganisasjon”, which means local authorities international environmental organization. The project is about cleaning the North and South Sea.

Another project is the “International coastal cleanup day”, which is every year on the 25th September. More than 100,000 people volunteer every year for this project.

One interesting project is “The ocean cleanup”. It´s a project of Boyan Slat, an 19-year old netherland student. He invented a new technology to get the rubbish out of the ocean to recycle it without fishing other animals or plancton out of the water. 2014 the first pilot plant was financed by croudfounding.

**2.4.2 Organizations**

The majority of the organizations, which consider ocean pollution are not really famous, because there are many of them – in Germany and also in other countries.

A famous organization which acts in Germany, is NABU – Naturschutzbund Deutschland (organization for nature protection in Germany). This organization tries to inform the people about ocean pollution and makes initiatives to gather trash at the ocean and at lakes and rivers. At the 20th August to the 12th September there was a project to inform people about ocean pollution. It took place in the “Sealife” in Hannover.

Another german organization is Deepwave. “DEEPWAVE is dedicated to the protection and restoration of marine ecosystems and the species they sustain, through the development of innovative technologies, and conservation action based on scientific developments.” 1. The organization was foundet in 2003.

Other organizations in Germany are:
AG Ostsee
Hohe Tied
Verein Jordsand
Schutzstation Wattenmeer
EU CC-D

Other organizations in Europe are:
WWF
Greenpeace
Green ocean e.V.

Organisations wich act all over the world:
fair-oceans
mundus maris

**2.4.3 Laws**

In Germany there are some laws concerning ocean pollution.
One of this laws is, that nobody is allowed to throw trash in the ocean (or in rivers or lakes). Another one concerns ships - since 1988 it is prohibited by law to throw plastic in the ocean. If you do this in Germany, you could have to pay 50000€ fine. Furthermore, it is prohibited to funnel sewage into the ocean.
Ocean pollution by means of ships can be judged as criminal offense.

**2.5 Countermeasures of every person**

First we have to clarify how the trash reaches our ocean.
In the cosmetic products are small plastic balls to reinforce the cleaning effect. These plastic balls reach the ocean via the spillways. The creatures in the ocean ingest the plastic balls and it comes to a poisoning.

Next, the ships join in, they dispose their trash in the ocean, and that in large amounts.

Trash on the beach : especially in the tourist countries, reaches trash from the beach the ocean. And plastic bottles, for example, need 450 years to dismantle. The fish get entangled and die on a agonizing death.

Many people ask themselves ''what can we do against ocean pollution?'',

many people say ''we, as citizens, can do nothing against it''. But the solution is really easy.
The easiest way to ''hold up'' the pollution is, to buy less plastic(bags) and try to avoid disposable packaging. Furthermore you can join organizations which are fighting against the ocean pollution.

Then you can protect the water by using curd soap instead of toxic chemicals.
You can also stop to dispose things like, color, benzine, ammonia or your oil, in your drain. And dont wash your medications down the toilet. Because medications contain many different injurious materials for the ground water. If you have medications which you don't use any more, go to the next pharmacy, he can dispose it for you. So you avoid that these medications attain to our water cycle.

You think that's useless, but when everyone, every single human would observe these points, we could safe THE, no, OUR oceans.

**3. Final remark**

Ocean pollution has very bad consequences. We have to save the ocean, otherwise we will destroy the whole planet, because the ocean effects the whole climate system.

There are many organizations to protect the ocean. That shows, that many people know about the consequences. The problem is, that this is not enough. These organization are not able to save the oceans without help of us all. We have to do something too.

Furthermore, politic doesn´t do enough for the ocean. Of course there are some laws in Germany, but these laws are not enough and they doesn´t enforce these laws enough.

Another point, which shows that there is not enough commitment from the government, is the nonexistent interest in new things, which could help to protect the ocean. An example for that is the new technology to clean the ocean, which was invented by the 19-year old student from Netherland. The first pilot plant was financed by croudfounding. The government paid nothing for this new Invention.

We found out, that people from different countries know different things and a different amount of things about ocean pollution.

The person from Syria didn´t know much about it. Our group knew some things, but no specific details. The asked people from Canada knew more things than we knew.

But we are not able to say these things in generally, because we asked only a few persons, which also were in different ages (the canadian people were adults, the others students).

I think, that politics are very important. Not only for making rules, but also to inform the people. A while ago person from america said to me, that in America some people in the government receive bribes from some big companies and that´s why they say that there is no climate change. When politic persons say something like that, many people believe this and there is no chance to protect the environment and the ocean when people think there is no problem.

Therefore, we have to inform others about this problem and we have to change our behavior, to save the ocean, the environment, the planet and ourselves!

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