

# **How Does Deforestation in Madagascar Affect Biodiversity?**

BY: Deniz Göktepe

SUPERVISOR: Patricia Elliston

IŞIKKENT EĞİTİM KAMPÜSÜ

SCHOOL CODE:

WORD COUNT: 2720

# TABLE OF CONTENTS

	PAGE NUMBER
Investigating (Criteria A).....	3
Planning (Criteria B).....	4
Taking Action (Criteria C).....	5
Reflection (Criteria D).....	6
Bibliography.....	8
Appendices.....	10
Appendix A- Research.....	10
Appendix B- Process Journal.....	14
Appendix C- Feedback Forms.....	16
Appendix D- Criteria.....	17
Appendix E- Emails.....	18
Appendix F- Photos of the Presentation.....	19

## INVESTIGATING (CRITERIA A)

The goal of this project was to spread awareness to other people about the deforestation problem in Madagascar and how it was affecting the biodiversity in our world. Recently, with the help of my friends, I became aware of the situation that our world was in, how we were consuming our resources very quickly without noticing and making the world we live in slowly die. Ever since this came to my attention I knew I wanted to make a project about spreading awareness about this topic. There were many topics I could choose within this broad subject but I wanted my topic to be unique and something less known. I discussed this with my supervisor and with her guidance I was able to find this topic. Madagascar is an island and the only thing people knew about it was its lemurs. No one around me was aware of the serious deforestation problem Madagascar is facing and its affects on our world, so I knew this topic would be perfect for my project and to make a difference. In the other hand, I also considered this goal highly challenging. Even though the idea of spreading awareness was simple, I knew it required a lot of time and effort. After talking with my supervisor I decided that presenting my research would be the best choice for me. I thought that presenting to a young group of people would be better for my project since my goal was to spread awareness and this young group would be the one getting affected by the problem deforestation in Madagascar was going to cause. This way it would be easier to influence this young generation with the threats they were going to face in the future if this problem was not stopped. During my presentation I had to be able to demonstrate the danger this problem was going to cause and how serious it was. Presenting was the most challenging part for me. I've always loved researching but presenting was never my strong suit. I am a person who gets nervous very easily and sometimes this results in shaky voice and hands, making it really hard for me to present my work. To achieve my goal I had to overcome this fear of mine. I worked really hard and presented my work to my supervisor, friends and family in order to prepare myself for the real presentation.

For this project I chose globalization and sustainability as my global context. Even though deforestation in Madagascar may not seem like a global problem from a first glance it actually affects the whole world. Deforestation causes many problems in Madagascar and one of them is the decrease of biodiversity. Madagascar has a lot of endemic species and because of its seasonal environment it is impossible for those species to live elsewhere. With deforestation these species will go extinct and the biodiversity of the world will decrease, causing a global problem. With this problem getting even more serious every day it is important for us to sustain these species and protect the biodiversity. This project will also contribute to UN's Sustainable Development Goals as a part of the 15<sup>th</sup> goal, Life on Land. My project's goal is to spread awareness about deforestation to help and protect our environment, just like in the 15<sup>th</sup> goal which UN explains as "sustainably managing forests, combating desertification, halting and reversing land degradation, halting biodiversity loss".

I started doing this project while depending on my knowledge about endangered species across the world. Knowing about different species has always been a passion for me. Even though this knowledge of mine wasn't quite deep it gave me confidence while doing it and my interest in this subject helped me continue this project with curiosity. While researching I came to a conclusion that even though with my knowledge there were many things I still didn't know and some details that were really important so I needed more time

to continue my research (see Appendix A- Research). Because of this I had to make some changes in my planning, nonetheless, the research I've made did not change the goal of this project. I was still sure and determined about what I wanted to do; which was spreading awareness.

Before starting this project, I had a few researching skills such as; data collection, finding information from the internet, summarizing and I also knew how to make a cause and effect research but throughout my research I was able to develop these skills, also gain more skills. A few of the skills that I've learned are; critical thinking, explanation skill and analytical thinking. Critical and analytical thinking were very important for picking out the important information and connecting it with other parts of the topic. I believe that the research that I've done wouldn't be that important if I weren't able to explain it clearly and this skill allowed me to do that. I had to work on it a lot but in the end I was able to develop it.

For resources I used websites and chose dependable sites. The reason why I chose websites as my sources was because they were the most useful sources. They had the most up-to-date news that I could use for my project. I tend to use university researches, projects that were still ongoing in the area and institutions like WWF. Most of the other sites were less useful since they weren't as reliable as much as other sites were (see Bibliography)

## **PLANNING (CRITERIA B)**

My goal was to spread awareness about the deforestation problem Madagascar is facing and how it is affecting the biodiversity. To achieve my goal, I did a presentation of my research to 8<sup>th</sup> graders in their English class. A successful outcome of this project would be changing the actions of the people I did my presentation to towards our environment in a positive way, inspire them to think and change their point of view to solve these problems and make them a bit more aware of the problems our world is facing. These three points are especially important to me because when the situation our world was in came to my attention thanks to my friends, I went through these three stages myself. The things that they told made me change my lifestyle and now, I want to change other people's point of views. (To see the detailed version of my criteria see Appendix D- Criteria)

To check how much I was able to live up to my criteria I used a feedback form. After doing my presentation I gave out feedback forms to the 8<sup>th</sup> graders. This is how I evaluated the outcome of my project. The form consisted of three questions;

1. Were you aware of this problem and its severity before the presentation?
2. Did this presentation change your point of view? If so how?
3. What action can we take as an individual and as a school?

In my project the global context I chose guided me but it did not change the project's outcome. My context pushed me to think globally; instead of only looking at the affects of deforestation on Madagascar's biodiversity I looked now it was affecting the world's biodiversity. It also made me research and think about how to sustain biodiversity.

I used a timetable to manage my time (see Appendix B- Process Journal). This table contained my due dates for finishing my research (27.12.2019), summary of my research (03.01.2020), preparation of my presentation (10.01.2020) and presenting it (within the week of 13.01.2020). After making my timetable there were some issues with my presentation date so it had to be changed. I was originally going to do a presentation open to everyone in my high school but while I was dealing with this issue an opportunity came to me. I learned with the help of my supervisor that the 8<sup>th</sup> graders were studying biodiversity in their English classes. I talked with their English teacher, Gülen Smiles about my presentation through email (see Appendix E- Emails). She told me that it would be great for their class as well and we arranged a date (10.02.2020) for my presentation.

When I first started my project I did not have many self-management skills. I only had a small idea of how to organize from my past projects at school but in all of those projects I had help from my peers and teachers so I had never done something like this. During my project I had to talk to many people and be organized in order to do my presentation. I also did it with my own initiative, without anyone else telling me to do so. In order to organize my presentation, I also had to be organized myself (see Appendix B- Process Journal)

## **TAKING ACTION (CRITERIA C)**

My success criteria are divided into 4 criterions; function, user/audience, environmental consideration and impact (see Appendix D- Criteria for the detailed version of my success criteria). In my presentation I talked about the importance of Madagascar and told about it's biodiversity. I talked about deforestation's affects in a national and in a universal scale and the reasons that led to it. I also talked about what Madagascar needed to overcome this problem. When we look at my criteria we can see that my presentation was able to fulfill its function. My audience for the presentation was 8<sup>th</sup> graders. They had been studying biodiversity for a couple of lessons and that was the reason I chose them since they would be able to understand the concept easily. From my criteria we can see that I was successful in finding my targeted audience. During my presentation I answered and asked questions in order to understand whether they had understood the topic and my language. I also gave out a feedback form (see Appendix C: Feedback Forms) and after I read them I was quite surprised to see the many ideas they had created to help Madagascar. A few of them wrote that they were hoping to adopt a lemur soon (this is a donation project made by WWF). From these given feedbacks we can see that I was also successful on my environmental consideration criterion. The students answered the questions on my feedback forms carefully and were able to create ideas to help the world. I also understood from the feedback forms that I was able to spread awareness as I wanted to. All of the students wrote about how this presentation was able to make them aware of the situation Madagascar was in. From these feedbacks we can see that I was able to achieve my last criterion, impact.

When I first started my project I only had a few of the thinking skills. I knew a little bit of how to analyze and how to reflect. After the project I developed critical and creative thinking skills as well as learning how to evaluate. I had to use critical thinking and analyzing in order to choose the important information about my project from websites and connect my old and new-learned knowledge together. While preparing my presentation I had to use creative thinking. I thought about how I could do my presentation while making it fun for my audience. I made it interactive and asked questions so that they could listen to me more carefully. I also learned how to evaluate my work. I had an idea on how to do it but I had never actually evaluated my own work. I reflected on how I did my project and in which way it could be done better.

Before this project, social and communication skills were the skills that I had the hardest time with. I accepted responsibility, was good at adapting to different groups of people, cooperating and listening before the presentation but I wasn't good at speaking and presenting. I would always get nervous before presentations and if I were to speak for a long time on my own. While doing this project I had to practice presenting and speaking without my voice cracking. I practiced my presentation a lot of times and in the end I was able to present just like I had planned.

## **REFLECTION (CRITERIA D)**

During my project I made changes on my product and some of my due dates but my goal for this project never changed. My goal, spreading awareness was the reason I chose this project so I let my project shape to meet my goal. At first the product I had planned was a video which explained my research but I changed it into a presentation since I thought that it would be more effective in order to reach my goal and according to the success criteria I have created I can say that my product was successful. With my product I was able to spread awareness to my audience and make them think about how they can help to solve our world's problems. There were some ways I could improve this project such as designing a campaign with the 8<sup>th</sup> graders after my presentation but unfortunately because of the given time it was not possible for me to add that in my project.

The biggest reason why I was able to achieve my goal is because of my interest and dedication. I chose this topic thinking I could actually spread awareness and change the world. I chose it because I wanted to have a part in making the world a better place. This project meant something for me from the start. If I were to choose something I wasn't actually interested in I wouldn't want to continue the project and most probably couldn't achieve my goal. As I continued doing my research I was able to learn deeper knowledge about Madagascar and its deforestation problem. During my research I also understood how my global context, globalization and sustainability had such a strong connection with my topic. Sustainability was the only way Madagascar could break free from this situation which was a global problem because of the high number of endemic species in Madagascar.

While completing my project I noticed my weaknesses and strengths. I did not know how to make a good presentation, presenting and talking in front of other people scared me and my time management needed development. In the other hand my knowledge on different species and on their lifestyles helped me a lot even though it wasn't very deep. It gave me a place to start and a template I could continue my research on. In order to improve and get over the challenges I worked really hard. I talked with my English teacher to guide me to make a good presentation. I showed her my presentation beforehand and listened to her advice. I also practiced what I was going to say at home and presented my work to different audiences such as my family and friends. For time management I put reminders and kept my journal daily so that I could use the remaining time effectively. This skill was especially important for organizing my presentation to the 8<sup>th</sup> graders. I also kept my process journal (see Appendix B- Process Journal) organized, writing things that I did that were important for my project.

As an IB learner I developed a lot, I improved in these areas; knowledgeable, reflective, communicator and thinker. By doing my research I learned many things I didn't know before and these this new knowledge that I've learnt helps me analyze different situations better as well as look at a different perspective which I didn't know before. While I was organizing and doing my presentation I worked on my communication skills. Through emails and lot of meetings I organized my presentation and as I was presenting I made sure everyone understood what I was talking about. After every class I did my presentation to I asked what I could do to make a better presentation. After getting their answer I also reflected on it on my own, making every presentation a learning experience for myself. All of these new skills that I've learnt and improved makes my future experience easier for me. These skills that I've developed prepares me for the obstacles I will face in the future.

## BIBLIOGRAPHY

Alonso, Nathalie. "Animals in Madagascar Threatened by Deforestation." *Animals.mom.com*, 21 Nov. 2017, [animals.mom.me/animals-madagascar-threatened-deforestation-5467.html](https://animals.mom.me/animals-madagascar-threatened-deforestation-5467.html).

Butler, Rhett A. "Consequences of Deforestation." *Mongabay*, Mongabay, 1 Apr. 2019, [rainforests.mongabay.com/09-consequences-of-deforestation.html](https://rainforests.mongabay.com/09-consequences-of-deforestation.html).

Clark Megan. "Deforestation in Madagascar: Consequences of Population Growth and Unsustainable Agricultural Processes." 2012. PDF.

Covell, Maureen Ann, et al. "Madagascar." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 21 Nov. 2019, [www.britannica.com/place/Madagascar](https://www.britannica.com/place/Madagascar).

"Deforestation in Madagascar." *LCLUC*, [lcluc.umd.edu/hotspot/deforestation-madagascar](http://lcluc.umd.edu/hotspot/deforestation-madagascar).

"Deforestation Is Threatening Madagascar's Unique Biodiversity." *CIRAD*, CIRAD, 17 May 2018, [www.cirad.fr/en/news/all-news-items/press-releases/2018/deforestation-in-madagascar](http://www.cirad.fr/en/news/all-news-items/press-releases/2018/deforestation-in-madagascar).

Ganzhorn, Jörg & Lowry II, Porter & Schatz, George & Sommer, Simone. (2008). The Biodiversity of Madagascar: One of the World's Hottest Hotspots on Its Way Out. *Oryx*. 35. 346 - 348. 10.1046/j.1365-3008.2001.00201.x.

Harper, Grady J., et al. "Fifty Years of Deforestation and Forest Fragmentation in Madagascar." *Environmental Conservation*, vol. 34, no. 4, 2007, pp. 325–333., doi:10.1017/S0376892907004262.

Jones, Benjamin, et al. "Forests Housing Rare and Endangered Species Lost 1.2 Million Hectares of Trees Since 2001." *World Resources Institute*, World Resources Institute, 6 May 2015, [www.wri.org/blog/2015/05/forests-housing-rare-and-endangered-species-lost-12-million-hectares-trees-2001](http://www.wri.org/blog/2015/05/forests-housing-rare-and-endangered-species-lost-12-million-hectares-trees-2001).



Kramer, Rachel. "Madagascar." *WWF*, World Wildlife Fund, [www.worldwildlife.org/places/madagascar](http://www.worldwildlife.org/places/madagascar).

Maher, Julie L. "The Makira REDD+ Project ." *Makira REDD+*, 2019, [makiraredd.wcs.org/?\\_ga=2.252195977.1436532507.1579794247-584961494.1579794247](http://makiraredd.wcs.org/?_ga=2.252195977.1436532507.1579794247-584961494.1579794247).

Preti, Guido. "Deforestation in Madagascar: a Threat to Its Biodiversity." *E.O.I. Blogs*, E.O.I., 4 Feb. 2014, [www.eoi.es/blogs/guidopreti/2014/02/04/deforestation-in-madagascar-a-threat-to-its-biodiversity/](http://www.eoi.es/blogs/guidopreti/2014/02/04/deforestation-in-madagascar-a-threat-to-its-biodiversity/).

"Threats to Madagascar's Biodiversity and Ecosystems." *Threats to Madagascar's Environment*, [www.wildmadagascar.org/conservation/threats.html](http://www.wildmadagascar.org/conservation/threats.html).

Weisse, Mikaela, and Liz Goldman. "The World Lost a Belgium-Sized Area of Primary Rainforests Last Year." *Global Forest Watch Blog*, Global Forest Watch, 25 Apr. 2019, [blog.globalforestwatch.org/data-and-research/world-lost-belgium-sized-area-of-primary-rainforests-last-year](http://blog.globalforestwatch.org/data-and-research/world-lost-belgium-sized-area-of-primary-rainforests-last-year).

# APPENDIX

## APPENDIX A- RESEARCH

### How Does Deforestation in Madagascar Affect Biodiversity?

Madagascar is an island country located on the southeastern coast of Africa, in the Indian Ocean. It is also the fourth largest island in the world after Greenland, New Guinea and Borneo (Britannica). It has been separated from other land masses for about 60-80 million years - 3 biosphere reserves listed in the UNESCO and its also has one of the highest numbers of endemic species (Preti). The island is 144 million acres big (roughly twice the size of Arizona) and its population is more than 21 million (WWF).

Even though Madagascar is just an island, it holds an important role with being one of the eight “hottest” biodiversity hotspots based on richness and endemism of plants and vertebrates. 95 percent of reptiles, 89 percent of its plant life and 92 percent of its mammals exist nowhere else in the world (WWF), including eight different plant families, four bird families and five primate families (Weisse). Its ecosystem is home to more than 250,000 species of plants and animals (Preti). When looked globally Madagascar holds 5 percent of world’s biodiversity, making it a very important place on earth (Ganzhorn; Lowry; Schatz; Sommer).

Despite being such a unique and important place and earth it is not being fully protected and is dealing with a serious deforestation problem. Deforestation<sup>1</sup> has been ongoing in Madagascar for centuries and since the arrival of humans, two millennia ago, Madagascar has lost over 90 percent of its original forest cover (Clark ; WWF). Because of deforestation three ecosystems in Madagascar are fragmented and degraded. Today only 12 percent of the country is covered by primary forests<sup>2</sup> (Preti ; “Deforestation Is Threatening Madagascar's Unique Biodiversity.”). Primary tropical rainforests are a crucially important forest ecosystem with their thousands of years old trees. These forests can hold more carbon than other forests can and they are irreplaceable for sustaining biodiversity. They provide habitats to many animals from gorillas to tigers. Once these forests are cut down it is impossible for it to go back to its original form (Weisse). As a consequence, to this, tropical deforestation is one of the biggest factors in species extinction (Harper) and due to this situation, Madagascar now has the greatest number of critically endangered primates among all countries (WWF). Aside from tropical rainforests, many of the ecosystems within Madagascar are in need of help. Every single ecosystem in Madagascar holds tremendous

---

<sup>1</sup> When a forested area gets removed for various reasons such as agriculture, pasture, urban development, logging, etc. it is called deforestation. When this happens the natural environment goes through changes which might result in loss of habitat and reduction of biodiversity.

<sup>2</sup> These forests are forests that were able to gain great age without any significant disturbance.

amount of species and biodiversity. None of them should be ignored and be helped immediately (Ganzhorn ; Lowry ; Schatz ; Sommer).

Deforestation in eastern Madagascar is very rapid and if it doesn't get immediate help it is sure to lose its remaining biodiversity. Du Puy and Moat's map of remaining vegetation shows that only 11 patches, with a total area not exceeding to 450 sq km remain from the original forest which was 4500 sq km (Ganzhorn ; Lowry ; Schatz ; Sommer). This shows that only 10 percent of the forest remains. Dry deciduous forests are among the most threatened biomes with only 3 percent (800 ha) of their original area remaining. Famous lemurs of the island have come to the brink of extinction, now, they are all in the Red List of Threatened Species (Alonso). And with the rates of deforestation increasing extinction of the lemurs are getting closer. None of the remaining patches of littoral forest are large enough to maintain viable population of the larger lemurs and only a few deciduous forests are able to sustain every lemur characteristic of this vegetation type. Even in larger forest areas the impact of humans can be seen, and as time passes, it gets harder for many species to tolerate this impact. As the seasonal environment of Madagascar makes it impossible for endemic species to live elsewhere, they are being forced to continue surviving within these limited areas. If this continues it is expected for remaining endemic large animal species to get extinct between the years 2020 and 2040 (Ganzhorn; Lowry; Schatz ; Sommer).

The first impacts of deforestation are seen in ecological services provided by tropical rainforests and related ecosystems. As time goes by the severity of these affects increase leading to problems like global warming. Some of the impacts that occur are;

- Damage to the regular flow of clean water,
- Floods and droughts (The forest controls the flow of water, acts like a sponge. Sometimes it releases water while sometimes it keeps it inside the soil. When deforestation happens and forest cover is lost, the water becomes uncontrollable. In rainy seasons, the water flows rapidly through the streams and elevates water levels, causing floods. During the dry season, the opposite happens and causes months of droughts in downstream deforestation areas.)
- Decrease of humidity (Through transpiration<sup>3</sup> the amount of evaporation increases and as a result the frequency of rain increases. After deforestation plants can't perform transpiration which results in decrease of the frequency of rain.)
- Erosion (The forest holds the dirt in its place making it stable. The loss of trees causes the soil to move freely and cause widespread erosion. Good soil (soil with more nutrients) wash away with erosion, making it harder for Malagasy<sup>4</sup> to grow crops. Madagascar loses around 400 tons per hectare per year.)

Because of these impacts a part of Madagascar is a large, red, treeless desert. The flow of the river is slower and the water less causing the inhabitants to have less clean water. Because of the soil lost to erosion Madagascar's rivers run red and it stains the Indian Ocean. The astronauts have said that it looked as if Madagascar was bleeding to death. This also affects the marine life. The dragged soil in lakes, rivers and seas makes the fish swim away, smashes their eggs or lead to extinction due to habitat loss. It especially effects the coral

---

<sup>3</sup> The release of water through leaves in plants.

<sup>4</sup> People of Madagascar

reefs. With the effects of deforestation and global warming increasing each year the extinction of species has gone wild with 1 out of 10 species each year (Butler).

There are various reasons of deforestation in Madagascar but the most common ones are:

1. Tavy or Slash and Burn Agriculture (“Threats to Madagascar's Biodiversity and Ecosystems.”)

Slash and burn agriculture is when about an acre is cut down, burned, then used for agriculture and tavy has the same process as slash and burn but its used to turn tropical rainforests into rice fields. After a few years of production, the soil is left empty to regain its nutrients but unfortunately after repeating this cycle for two or three times the soil gets exhausted and hungry for nutrients so the rice can't grow. This creates the need to tavy another part of the forest and this cycle continues.

2. Logging for Timber (“Threats to Madagascar's Biodiversity and Ecosystems.”)

Logging timber has become a serious problem in the east side of Madagascar. The value of the Malagasy hardwoods can get to \$2,000 for a ton and this makes illegal logging a big problem.

3. Fuelwood and Charcoal Production (“Threats to Madagascar's Biodiversity and Ecosystems.”)

Madagascar's endemic spiny forest are being cut down to produce charcoal. In order to earn an income and help their families, Malagasy people are selling little piles of charcoal along the roads.

The Makira Forest is one of the deforestation hotspots in Madagascar. It is one of the largest remaining rainforest areas and is a tremendously important site for biodiversity conservation and critical ecosystem services (“Deforestation in Madagascar.”). The reason behind deforestation in this area is because of clearing pastures for grazing. Farmers who raise animals often burn grasslands and forest before rainy season in order to ensure the regeneration of pasture lands (Maher). This area is one of the most important biodiversity spots within Madagascar and deforestation in the forest results in habitat loss for many species. Because of it's importance, this area is under protection by the Makira REDD+ Project (Maher) This project is the biggest carbon emission reduction program in Madagascar and it works according to the commitments of the country in the Paris Climate Agreement (Maher). Even though this project was able to save a part of Madagascar's forests, deforestation still continues to happen in a big part of Madagascar, threatening the species across the country.

The Menabe-Andranomena AZE site is the last remaining habitat for 3 species in Madagascar: Madame Berthe's mouse lemur, the Malagasy giant jumping rat and the Madagascar jumping frog. Because of deforestation the population of these species are decreasing rapidly. Between the years 2001 and 2013 this area lost more than 10,000 hectares (15 percent of all tree cover in Madagascar's AZE sites). Even though this site holds 3 endangered species its still not being formally protected (Jones)

Because of the booming population in Madagascar agriculture has become a higher priority than environmental protection. The average children per woman is 4 or 5. This makes it hard for families to feed their children so they consult to illegal ways. There is a lot

of illegal deforestation because of slash and burn techniques (this technique results in conflicts over land, increasing cost of fertilizers and poor productivity after a few years of produce). Both the Malagasy and the animals of the area depend on the forests in the area for living. With the increasing rates of deforestation Malagasy and animals are becoming vulnerable. Unless Madagascar promotes sustainable agriculture, deforestation and its affects to the area will only get worse (Clark).

The main reason of deforestation in Madagascar is linked to economical and subsistence-related benefits that the people gain from the ecosystem (Preti). Madagascar is a poor country and this makes it impossible for its people to stop deforestation on their own. The country also needs help from the outside. A few things that could be done to help them (“Deforestation in Madagascar.”):

1. Farmers should be shown different ways to produce harvests in the same piece of land instead of cutting trees to create new areas for crops.
2. One of the biggest problems for Malagasy people, poverty is taking over Madagascar. The country requires support and effort from national and international forces. New job opportunities should be brought to Madagascar in order to help these people in poverty.
3. Regeneration of the forest should be ensured for the country’s endemic species and biodiversity to stay alive.

## APPENDIX B- PROCESS JOURNAL

21.10. 2019

In the meeting with my advisor we discussed what we could choose as our topics. I don't have a specific topic idea yet but I am sure that I want to something to spread awareness. Recently with the help of my friends it came to my attention that how serious global warming was and I started seeing its affects to our world more clearly. I want to do a project that would make people think about their impact to the world. I am thinking about doing a project about a serious problem like global warming that has negative affects to our world. A few ideas that came to my mind are: the affects of global warming on Turkey, the affect of deforestation on global warming, the affects of recent Amazon fires to the world.

04.11.2019

I thought a lot about what I could do and shared my ideas with my supervisor. Afterwards she told me about the time she went to Madagascar and how deforestation was a big problem there. I had no idea about the deforestation problem in Madagascar. I asked my friends and family whether they knew about this problem in deforestation and they all said no. This made me rethink through my ideas. All of the topics I had came up with was known and there were already projects about them but in the other hand problems Madagascar was facing was unknown. I did a little bit of research and found out that Madagascar was a really important place for sustaining biodiversity. In conclusion I found the topic that I wanted to do in my research: How does deforestation in Madagascar affect biodiversity?

18.11.2019

Our supervisor told us to select a global context for our project. I chose globalization and sustainability. Deforestation in Madagascar is not only a local problem but a global one. Madagascar has a serious percentage of biodiversity and with deforestation these species are under threat. That is the reason why sustaining its unique ecosystems are very important.

25.11.2019

In the meeting with my advisor we tried to find our products. Since I am doing this project to spread awareness I thought I could make a video similar to TEDed videos or do a presentation. I also started my research.

04.12.2019

I'm continuing with my research. I am using websites as my source, this way I can reach to university researches and up to date news about deforestation in Madagascar. As I read more about this subject I am amazed how important Madagascar is for the world's biodiversity. I am really glad that I chose this as my topic.

10.12.2019

I talked with my advisor today and decided on doing a presentation as my product. I am going to do the presentation instead of the video because it might be more effective to do it in person since I am aiming for spreading awareness. The presentation will probably be open for everyone and only the people who wish to come will join the presentation.

18.12.2019

Timetable:

1. Finishing the research- 27.12.2019
2. Finishing the summary of my research- 03.01.2020
3. Preparing my presentation- 10.01.2020
4. Presenting my presentation- within the week of 13.01.2020

13.01.2020

I had a few problems with my presentation date. I had planned on doing it in the last week of school before the holiday starts but unfortunately there are a very few number of people at school. My supervisor told me that the 8<sup>th</sup> graders were studying biodiversity in their English class. I thought that this would be a great opportunity for me so I will do my presentation to the 8<sup>th</sup> graders. Due to this my presentation date is changed to the first (the week of 03.02.2020) or the second week (the week of 10.02.2020) of school after the holiday.

30.01.2020

I talked with Gülen teacher (English teacher of the 8<sup>th</sup> graders) and after a few emails we set a date for my presentation. The presentation will be the Monday of the second week of school after the holidays (10.02.2020).

10.02.2020

Today I did my presentation to the 8<sup>th</sup> graders and it went very well. They were very interested in the topic and asked me questions about it. I also gave out my feedback forms to understand whether I was able to achieve my goal. They all gave positive feedback and wrote that they noticed how important this problem was.

# APPENDIX C- FEEDBACK FORMS

8/12  
FEEDBACK FORM

Were you aware of this problem and its severity before the presentation?  
Did this presentation change your point of view? If so how?

I wasn't aware of the environmental problems in Madagascar before this presentation. It made me more aware about different places in the world.

What action can we take as an individual and as a school?  
Maybe we could create a way of finding some money to help Madagascar.

- 1- I knew what it was but I wasn't really aware of it.
- 2- This presentation changed my point of view by getting me more aware and starting to care about this problem.
- 3- In individual I can adopt a ring-tailed lemur and as our school we can explain people how much biodiversity is important and maybe start a little help project for Madagascar.

8-8

1- I wasn't aware of this problem before this presentation.

2- Yes, this project changed my point of view. I didn't know that Madagascar was going through this.

3- I will be doing research about this problem myself and I'll be sharing it with my family. (I'll hopefully be adopting a lemur soon!!!)

Did this presentation change your point of view? If so how?  
No, I was not, especially not in Madagascar. Yes, it did change my point of view. Now I am aware that this is a very serious problem.

What action can we take as an individual and as a school?  
We can donate to Madagascar by adopting a ring-tailed lemur. We can also raise awareness by informing people about this problem.

- 1- I was aware of the deforestation problems on our planet but I did not know that Madagascar got effected by this problem that much.
- 2- The presentation did not change my point of view. I am still against deforestation in every way and I believe that it should be stopped immediately.
- 3- We can all donate to save biodiversity but if we want to stop deforestation we would have to influence other people and make them aware about the problems that we have to face if deforestation does not stop.

1. I was aware about global warming but I was NOT aware of Madagascars deforestation, also I didn't know that the world is going to lose 5 percent of the species.
2. This presentation changed my point because I was NOT aware of Madagascar.
3. we can donate or adopt a Lemur and we could all make a presentation about this topic and present to our friends as a school.



## APPENDIX D- CRITERIA

	<b>FUNCTION</b>	<b>USER/AUDIENCE</b>	<b>ENVIRONMENTAL CONSIDERATION</b>	<b>IMPACT</b>
<b>1-2</b>	My presentation reflected the importance of the deforestation problem in Madagascar poorly.	Anyone	After my presentation the 8 <sup>th</sup> graders poorly understood the importance of the biodiversity in Madagascar and couldn't create ideas to stop the deforestation and save it's biodiversity.	At the end of my presentation I was able to spread awareness to a very little part of 8 <sup>th</sup> graders.
<b>3-4</b>	My presentation reflected the importance and the reasons behind the deforestation problem in Madagascar partly.	Adults	After my presentation the 8 <sup>th</sup> graders partly understood the importance of the biodiversity in Madagascar and created only one idea to stop the deforestation and save it's biodiversity.	At the end of my presentation I was able to spread awareness to half of the 8 <sup>th</sup> graders.
<b>5-6</b>	My presentation reflected the importance and the reasons behind the deforestation problem in Madagascar.	Teenagers	After my presentation the 8 <sup>th</sup> graders mostly understood the importance of the biodiversity in Madagascar and created a few ideas to stop the deforestation and save it's biodiversity.	At the end of my presentation I was able to spread awareness to most of the 8 <sup>th</sup> graders.
<b>7-8</b>	My presentation reflected the importance, the	Teenagers who have a basic understanding of	After my presentation the 8 <sup>th</sup> graders	At the end of my presentation I was able to

	reasons and the solutions for the deforestation problem in Madagascar.	biodiversity and the importance of it to our world.	understood the importance of the biodiversity in Madagascar and created a bunch of different ideas in order to stop the deforestation and save it's biodiversity.	spread awareness to the 8 <sup>th</sup> graders and push them to think about how they can help the world.
--	--	---	---	---

## APPENDIX E- EMAILS

Deniz Göktepe

30.01.2020 Per 16:01

Gülen Smiles ☑



Hello Mrs. Smiles!

Sorry if I'm disturbing you during the holidays I just wanted to talk to you about my project.

I believe Mrs Elliston already talked to you about my personal project which is about how deforestation in Madagascar affects biodiversity. I wanted to thank you for letting me present my work to the 8th graders. I also wanted to ask wether we could set a date for my presentation. I can also come during one of my breaks on monday to set a date if that would be better for you!

Gülen Smiles

30.01.2020 Per 17:21

Deniz Göktepe ☑



Hi Deniz,

I am very pleased to receive your e-mail and looking forward to having you in my 8th grade classes as a presenter. If you are ready to present I have lessons with 8-D, 8-B and 8-C on Monday at 5th,6th and 7th period. You are very welcome to attend on those periods. If those lessons are not good for you I have lessons all afternoon on Monday therefore I will be busy to plan anything. On the other hand I am avalaible all Monday morning and Tuesday afternoon to meet you if that's better for you. What do you think?

Cheers

Deniz Göktepe

30.01.2020 Per 22:29

Patricia Elliston ☑



Hi Mrs Elliston!

I talked with Gülen teacher. She said I could come on talk to her on monday morning and we could set a date. I have my first 2 lessons with you that day. Is it possible for me to go talk to her during that time if we're not going to do something important?

Patricia Elliston

30.01.2020 Per 23:32

Deniz Göktepe ☑



We always do something important 😊 But yes you can go talk to her during my lesson. Why dont you go straight after tören?

First two emails are between me and Mrs. Smiles (the English teacher of 8<sup>th</sup> graders). It shows us organizing the date for my presentation. The last two emails are between me and Mrs. Elliston (my supervisor). It shows me asking to talk to Mrs. Smiles about setting the date during school.

APPENDIX F- PHOTOS OF THE PRESENTATION

