



Plan of Approach

O&O project

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Aouragh

Class: 5V Technasium

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Teacher: Mr van Soelen

Client: International Union for Conservation of
Nature and Natural Recourses

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INFORMATION PAGE

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He is in class 5V1 at the pre-university education of the Calandlyceum. He has chosen Nature and Technology as the subject package, with BSM and Technasium as additional subjects. He is good at coming up with solutions to problems and is also good at building a model, for example. His email address is: 118550@calandlyceum.nl

Andy Chin:

He is in the 5V2 class at the pre-university education of the Calandlyceum. Like Robin and Rayan, he has the Nature and Technology profile, with additional courses in R&D, Computer Science and Drawing. He is creative and can put together animation videos and is also very ambitious. His email address is: 118514@calandlyceum.nl

Rayan Bouddount

He is in the 5V2 class at the pre-university education of the Calandlyceum. He has chosen the Nature and Technology profile as his subject package, with R&D and business economics as additional subjects. He is also good at coming up with solutions to problems and is also very concerned with helping nature. His email address is: 118479@calandlyceum.nl

Safae Aouragh

She is in the 5V2 class at the pre-university education of the Calandlyceum. She has chosen the Nature and health profile as her subject package, with BSM and Technasium as additional subjects. She is good at taking care of a group and is also good at giving teammates advice to move forward. Her email address is: 118425@calandlyceum.nl

PREFACE

In the first week of school we first had to make a group. Our choice fell directly on each other, because we know from each other that we have a lot in common when it comes to executing a project. Before we started this project, we did a personality test. After this whole event we had to find a client, with the requirement that we had to help a third world country with a problem. Before we did this, we discussed with each other exactly what kind of client we wanted. We all really wanted to do an assignment that had to do with nature. Then we all went to look at clients. Finally, our eye fell on the IUCN. Then we decided to look at the site and this appealed to us very much, as she also thought nature was very important just like us. Then we decided to send the client an email about who we are, what we do. They responded positively and that is how we found our client.

Summary

The team is allowed to research the consequences of deforestation and mining for knowledge. The question that will be answered is how the environment and the local population will not suffer from deforestation and mining. This will not be very easy, because the demand for raw materials and agricultural products is constantly increasing due to the worldwide population growth. It is important that there is an alternative, because the resources are running out. Recycling can be a solution or looting resources from other planets. At the end of the project, the team delivers a final report.¹²

¹ *Inheemse volkeren en biodiversiteit*. (n.d.). IUCN NL. Retrieved October 30, 2022, from <https://www.iucn.nl/blog/inheemse-volkeren-en-biodiversiteit/>

² *Both ENDS: Inheemse kennis en talen cruciaal in strijd tegen klimaatverandering*. (n.d.). Both ENDS. Retrieved October 30, 2022, from <https://www.bothends.org/nl/Actueel/Voor-de-pers/Inheemse-kennis-en-talen-cruciaal-in-strijd-tegen-klimaatverandering/>

INTRODUCTION

Deforestation

Man is the problem. The disappearance of the Amazon and other forests is due to deforestation. This deforestation is necessary for the production of soy or palm oil. Countries import those goods from the country of production and then it goes to the supplier. The supplier sells it to the supermarkets.

Consumers buy the agricultural products and can then use them. For example, a well-known product in China is soybean ice cream. Palm oil is used in several edible products and can also be used as an alternative to fossil fuels.³

More and more people are joining. More and more soy and palm oil is needed to supply them. The demand is going up. There will be fewer and fewer trees. Deforestation for arable farming is an environmental problem. Trees retain and absorb carbon dioxide. In return, they emit oxygen as waste. By cutting down forests, carbon dioxide emissions will rise and more sun rays will be reflected back to the earth, causing the average temperature to rise. As a result, extreme weather occurs more frequently throughout the world throughout the year. Deforestation will also disrupt the well-being of ecosystems. The forest is the habitat of several animals. The disappearance of animals from a habitat has adverse consequences for plant life. For example, birds ensure that the insect population remains in balance and large birds of prey keep the populations of birds in balance. There are many benefits that trees have. It is food for herbivores, they provide shade and therefore regulate the temperature, the soil remains firm, it prevents erosion and trees stimulate biodiversity.

The expansion of the soy and palm plantations is at the expense of trees. Arable farming is not good for the environment with a monoculture. The same crops on a large scale are susceptible to diseases. That is why biodiversity is important for a healthy ecosystem. In addition to that, monoculture also depletes the soil. This is partly because the crop absorbs the nutrients from

³ DE ONTBOSSING VAN HET AMAZONEGEBIED.
(z.d.). *Studenttheses*. <https://studenttheses.uu.nl/bitstream/handle/20.500.12932/14108/Scriptie.pdf?sequence=1&isAllowed=y>

the soil for growth. When the plant has reached a certain age, the salable organs are amputated with a large machine. The raw materials that the crop has extracted from the ground end up on someone's plate or are used as animal feed and do not go back into the ground. The soil is then fertilized again to keep the soil fertile. Fertilizing is not without consequences, because it contains a large amount of nitrogen. This is advantageous, because then crops get large leaves and it is also necessary to let the plant grow. But plants have evolved to survive on little nitrogen. Biodiversity is also harmed. Shrubs that grow quickly from nitrogen expand quickly, like nettles. The other plants then no longer have room to grow and biodiversity decreases as a result.

And it won't stop as demand continues to increase. Forests are still shrinking and humans have not yet found more sustainable solutions to this problem. 1.6 million people depend directly on forests to live. As long as it continues as it is now, there is no future for life on Earth.⁴

Mining

Raw materials to make furniture, appliances and buildings are obtained through mining. Coal, metals, gems and more can be mined. In addition, people can also earn their living by searching for underground stones, so there is employment. All those stones that have been in the ground for millions of years are suddenly awakened to become a product. Mining requires excavators and four-wheelers that have a bucket on the back that can hold rocks. Excavations are carried out until all ore is exhausted or when the demand decreases completely.

The environment does not benefit from this. Mining is very harmful to the area in which it takes place. First, all plant life must be removed from the chosen site. That is not a small area and together with the plants, the animals also chases away the mine area. Secondly, excavators generate a lot of greenhouse gases. All that digging and drilling costs a lot of energy and they also run on fossil fuels. The substances that are directly harmful to the environment are released by the explosives that are used to remove the top layer of stone. Those substances are also not healthy for the miners. Third, mining produces a lot of wastewater that is toxic to the environment. It also

⁴ *'Afname biodiversiteit is een slechte zaak voor de mens'*. (z.d.). Radboud Universiteit. Geraadpleegd op 30 oktober 2022, van <https://www.ru.nl/nieuws-agenda/meer-info/2019/mei/afname-biodiversiteit-slechte-zaak-mens/>

affects underground water currents and rivers. But that wasn't all. A lot of water is used for cooling excavators. Fourth, there is noise pollution. The animals that are close by hear the sound of all the rocks, machines and explosions and they leave the area if possible. People who live close to a mining site can suffer hearing damage.⁵

The damage caused by mining is always permanent. Even if they try to replant trees, it won't heal anytime soon. A mining operation can take more than ten years and the ground structure has completely changed. That's because worms that make the soil fertile aren't there. The tunnels of worms ensure that there is more oxygen in the soil and that water can be made better. Plant roots can move better through the soil. In addition, worms ensure that dead organic material can be digested by plants. It takes quite some time for an area that has been used to have a good soil structure. Mining is at the expense of the environment and there is no more sustainable alternative to products, so the end of this venture is not in sight.⁶

⁵ *De impact van de mijnbouw op het milieu.* (2022, 11 oktober). Comundos. <https://www.comundos.org/nl/content/de-impact-van-de-mijnbouw-op-het-milieu%E2%80%AF>

⁶ *Hoe gezond is jouw grond? Meetactie naar bodemkwaliteit, biodiversiteit en het belang van de regenworm.* (2022, 5 april). Rijksuniversiteit Groningen. <https://www.rug.nl/news/2022/04/hoe-gezond-is-jouw-grond-meetactie-naar-bodemkwaliteit-biodiversiteit-en-het-belang-van-de-reg>

CLIENT

The client is Monique de Jong. She has been the HR manager of IUCN NL since 2012. She also has qualities in areas such as internal communication, security, integrity and gender. She began her HR career at the end of the twentieth century at a media company. On a working day she likes to generate innovative concepts together with colleagues or to surpass the organization with good decisions. Her motivational motto is: 'I'm happy to help you'. She gets very excited about helping people progress.⁷

⁷ *Monique de Jong / HR Manager*. (z.d.). IUCN NL. Geraadpleegd op 30 oktober 2022, van <https://www.iucn.nl/monique-de-jong/>

ASSIGNMENT

Due to deforestation and mining, the knowledge of indigenous peoples is disappearing. The task of the team is to come up with a design to preserve the knowledge of indigenous peoples. The knowledge of the indigenous peoples is important. They know how to survive in a biodiversity rich environment. In addition, they have healing methods that extensively deal with the relationship between the body and the personality. The design will allow the indigenous population to store their knowledge and it will no longer be lost due to forests being cut down.⁸

⁸ *Endangered worldviews and heritage*. (z.d.). Leiden University. Geraadpleegd op 30 oktober 2022, van <https://www.universiteitleiden.nl/en/research-dossiers/indigenous-peoples-preserved/indangered-worldviews-and-heritage>

ISSUE

Due to population growth, the demand for products increases. Those products are extracted through agriculture and raw materials. Agriculture requires deforestation and raw materials require mining. Mining causes water pollution and CO2 emissions and surface mining in particular is the most harmful, because that is where plant life must also be removed. The loss of forests also means that the habitat of indigenous peoples is disappearing. As a result, the knowledge of it also disappears. This knowledge is important, because it is about living in an environment of rich biodiversity. It is important to maintain that knowledge. Because it is about how man and nature can live together. The modern western view of nature is that nature is only a facility. In this day and age it is now more than ever necessary for people to respect nature.⁹

⁹ Zie voetnoot 8

PRELIMINARY INVESTIGATION

IUCN NL is an international nature organization based in Amsterdam. They belong to the International Union for Conservation of Nature (IUCN)

The team conducted research on IUCN NL. Their projects can be found on their website. We have made a selection of these with the top 4 projects that seem most interesting to us. These projects were:

- Operation Jaguar, fighting wildlife crime
- Upembakundelungu complex and lake upemba, protected habitats
- Forests for just a future, protected habitats
- Nature-based solutions, utilizing natural resources

Every year an enormous number of hectares are cut down for the production of soy.

These soy plantations require millions of hectares of land every year. Deforestation has a negative impact on biodiversity, especially in South America. The Netherlands is one of the largest importers of soy in the world. The Netherlands plays an important role in this mass deforestation. So there must be a sustainable alternative to soy cultivation. This means that the available land must be used as efficiently as possible.¹⁰

The problem is that Indigenous peoples and their knowledge are already negatively affected by biodiversity loss. This is mainly due to the deforestation that is used to expand agricultural or mining activities, often at the expense of the territory and rights of indigenous peoples. In combination with the corona pandemic that was there, protecting the nature in which he lives.

Governments of different countries around the Amazon are expanding mining and agriculture more and more to make the economy of their countries even

¹⁰ *De productie van soja mag niet ten koste gaan van natuur.* (z.d.). WWF.nl. Geraadpleegd op 30 oktober 2022, van <https://www.wwf.nl/wat-we-doen/focus/voedsel/soja%E2%80%AF>

better. This so-called land grab endangers many people, animals and nature and this should certainly not happen. Also places where the Indigenous peoples harvest are in danger and so the rights of the peoples are not respected. Despite their role in addressing the climate and biodiversity crisis, land and forest management by indigenous peoples has received only a small fraction of international donor funding over the past decade, on average only \$270 million a year. This is less than one percent of official development assistance for climate change mitigation and adaptation.¹¹

¹¹ *Inheemse volkeren en biodiversiteit*. (z.d.). IUCN NL. Geraadpleegd op 30 oktober 2022, van <https://www.iucn.nl/blog/inheemse-volkeren-en-biodiversiteit/>

SUB- QUESTIONS

This project consists of two different phases: a research and a design phase. In the research phase we answer the following sub-questions:

- What existing alternatives are there and why are they not always used?
- What are the requirements for an alternative before it is considered sustainable?
- What factors should we take into account when devising an alternative?
- How can we satisfy all actors (stakeholder groups)?

Design phase:

In the design phase, we use all the knowledge we have learned by answering the sub-questions.

PROGRAM REQUIREMENTS

- The design must offer the possibility to store knowledge over a longer period of time.
- The knowledge must be legible or intelligible in the language in which it is stored.
- Indigenous people need to understand how the knowledge is preserved.

DELIVERABLES

Deliverable 1

The team is looking for existing solutions against deforestation and mining, which they note in a diagram.

Deliverable 2

The team brainstorms to come up with concepts.

Deliverable 3

The go/no go.

Deliverable 4

Developing an idea (and testing).

Deliverable 5

Final report with an animation video if necessary.

PLANNING

	Andy	Robin	Rayan	
26 sep – 2 okt	Write email and approach client			
3 okt – 9 okt	PVA Planning Deliverables Issue PVE Introduction Assignment Summary Sources	PVA front page Info page Preface Index	PVA Preliminary investigation Process & Completion Sub-questions	
10 okt – 16 okt				Caland-week
17 okt – 23 okt	Deliverable 1			Vacation
24 okt – 30 okt		Deliverable 2		
31 okt – 6 nov Deliverable 3(go/no go)			
7 nov – 13 nov				
14 nov – 20 nov				Vacation
21 nov – 27 nov			Deliverable 4	
28 nov – 4 dec	Animatie video	Deliverable 5		
5 dec				

PROCESS AND COMPLETION

At the start of each lesson, our team holds a quick discussion on current progress. After each lesson, each team member tells concretely what they have done in that lesson.

Team leader Andy Chin is responsible for weekly contact with the client and informing her of the progress (and soliciting feedback on prepared reports). The 3rd deliverable is the go/no-go moment, where we show 3 solutions to the client. She chooses the best idea in which she sees the most potential. We will develop this idea further and that will become our end product.

CITATION

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