

Deforestation in Uganda

A case study on the Zoka Central Forest Reserve, Adjumani District



Figure 1 Zoka Central Forest Reserve, Adjumani, Uganda.

Yara Bon

Bachelor thesis Geography, Planning and Environment (GPE)

Nijmegen School of Management

Radboud University Nijmegen

June 2020

Radboud University

Nijmegen, the Netherlands



*How do the government and civil society
organisations play a role in the causes of
deforestation?*

Author: Yara Bon

Student number: 4698681

Supervisor: M. Wajsberg

Word count: 24.129

Bachelor thesis Geography, Planning and Environment (GPE)

Nijmegen School of Management

Radboud University Nijmegen

June 2020

Summary

Nowadays, nature faces a lot of different threats, especially threats that are caused by humans. One important threat that is occurring in a lot of forests is deforestation (Sheram, 1993). Deforestation is currently a global issue. Particularly because it has a big impact on the environment and its services, which are related to the reduction of biodiversity and its contribution to climate change (Sunderlin, 2005). Deforestation is described as the permanent clearing of an area covered with trees (Derouin, 2019), or in other words, it is the conversion of a forest into an alternative permanent non-forested land use (Van Kooten & Bulte, 2000).

In the last few decades, a couple of factors have caused deforestation in Uganda. These include the growth of the human population and therefore the increase of demand for forest products to use both domestically as well as industrially. Added to this are the expansion of agricultural land, illegal settlements, and weak forest management capacity. This altogether has influenced the status of the forests in Uganda nowadays, where changes in the forest cover have happened due to degradation and deforestation over the past century (Obua, Agea & Ogwal, 2010; Zake, Nkwine & Magunda, 1999). Currently, the level of Uganda's forestland is approximately around 20 percent of the amount it was in 1890, this is seen as a result of deforestation (Zake et al., 1999).

The aim of this research is to attempt to make the situation in Uganda and in the Zoka Central Forest Reserve (CFR) clearer. The forest cover in Uganda is decreased from 4.9 million ha in 1990 to 1.8 ha in 2015 (MWLE, 2016, p.49). Annually 1,8% of the forests is being lost (NFA, 2016, p.23). This means that over the period of 25 years, 37% of the forests of Uganda has been lost (MWLE, 2016, p.48). Studies have shown that almost all of the forests outside of protected areas have been cleared. The remaining forests are in protected areas like forest reserves or national parks (NFA, 2016). Thus, it is of scientific relevance to gain insight into the causes of deforestation in the Zoka Central Forest Reserve, as not much is known about the situation there. In addition to this, it is of societal relevance to learn more about the deforestation of the Zoka Central Forest reserve for the local inhabitants, so that hopefully something can be done against the deforestation. The forest is slowly disappearing, and this negatively impacts the livelihood of local communities (Friends of Zoka, 2019), because the forests in Uganda are of great importance to the inhabitants. The overall contribution of forests is about 6% of the GDP (Obua et al., 2010, p. 854), which includes marketable and nonmarketable values, incomes for Ugandan households, and wood and non-wood products. To be able to reach the aim of attempting to make the situation in Uganda and the Zoka Central Forest Reserve clearer, the main question of this research is: *'How do the government and civil society organisations play a role in the causes of deforestation?'*. The government in this case is the national and local government in Uganda and the civil society organisation is Friends of Zoka. To answer this research question, I formulated five sub-questions.

This research has been conducted in a qualitative way, in the form of a case study. I chose a case study because this makes it possible to gain in-depth insight of the topic of deforestation (Creswell, 2007). Moreover, it allows to look at the subject from different points of view and find out why something is the way it is (Vennix, 2016). Research materials that are used in this thesis include literature, documents, and expert interviews (also as a method). The type of literature that is used is scientific, which includes books, papers, and journal articles mainly from the research disciplines of geography and environmental studies that focus on deforestation and the

management of common property resources. The theoretical literature covers the theory of the tragedy of the commons by Hardin (1968), the different direct and indirect causes of deforestation (Chakravarty et al., 2012), and suggestions on how to govern the commons according to Ostrom (1990). Next to this, I used policy documents of the Ugandan government and documents shared by Friends of Zoka on their achievements and currently running projects. A total of six interviews were conducted in a semi-structured way to be able to go deeper into certain topics related to the questions set up beforehand and to ask follow-up questions on what was being said. All the interviews were held either through Zoom or WhatsApp phone or video call, because most of the interviewees were located outside the Netherlands. The interviews were analysed with the program ATLAS.ti to get an overview of what was said on the different topics, like the causes of deforestation and how often each direct and indirect cause was mentioned. Also, to gain insight into the roles of the government and Friends of Zoka according to the interviewees. The codes used, are based on what is described in the theoretical framework. By applying the theories, the literature, and documents, I was able to answer the sub-questions and finally also the main question.

The most important findings are that economic reasons, overpopulation, and poverty can be appointed as the main causes of deforestation in general. At the national level of Uganda 'corruption and political cause' and 'logging and fuel wood' can be seen as causes of deforestation. When looking closer at deforestation at the level of the Zoka Central Forest Reserve, 'logging and fuel wood', 'corruption and political cause' and the 'commercialisation of forest products' can be found as causes of deforestation. The former being a direct cause and the other two being indirect causes of deforestation.

The national government and the Ugandan Ministry of Water, Lands and Environment have an important role in preventing deforestation from happening, but both actors are not living up to these expectations by give the impression of being involved in the deforestation themselves. Next to these institutions, the National Forest Authority (NFA) is responsible for the management of the Central Forest Reserves (CFRs). It seems that the NFA might play a role in deforestation as well, this is mainly caused by a lack of resources, and therefore the NFA cannot perform the work as it is expected to do. At the local level, my findings indicate that the local government is not performing their tasks as they should be and in addition to this, corruption appears to be taking place. Thus, this gives the impression that the government plays a negative role in deforestation in the Zoka Central Forest Reserve, by seemingly causing deforestation.

Next to the national and local government, the civil society organisation Friends of Zoka plays a role in the efforts against deforestation in the case of the Zoka Central Forest Reserve. They are playing a significant role in enhancing the conservation and protection of the Zoka Central Forest Reserve. Friends of Zoka is creating awareness among communities by connecting with these communities. Moreover, they bring illegalities to light through different platforms, while putting their own lives at stake. Altogether this thesis's results find that Friends of Zoka is playing a positive role in fighting against deforestation in the case of the Zoka Central Forest Reserve.

To add on the separate roles fulfilled by the national and local government and Friends of Zoka, it is also relevant to look at the relation between them. Sometimes they work together in preventing deforestation from happening. On the other hand, either Friends of Zoka or the

government could not do their work in the way they prefer because the other is making it harder for them to do so. Thus, this means that occasionally they work together and in other times, they are standing on opposite sites.

The results to answer of the main question '*How do the government and civil society organisations play a role in deforestation?*' are summarised as follows: the national government seems to be the invisible hand behind the young man that appear to be the owners of the business, and therefore contribute to the deforestation that is occurring in Zoka CFR (Anonymous, personal communication, 11 April 2020). Besides, the NFA is not stopping the deforestation, as it does not have the proper means to do so and due to this deforestation is still going on. On the local level the district local governments are contributing to the problem of deforestation by taking revenues and not performing the work they should be doing. Friends of Zoka is aiming to save the forest by acting on different levels, by creating awareness and mobilise communities, with radio announcements and exposing involved people in the process of deforestation (W. Amanzuru, personal communication, 12 April 2020).

For the case of the Zoka Central Forest Reserve it might be relevant to look at the solutions provided by different sources, such as Ostrom (1990), Zake et al. (n.d.), the policy documents (MWLE, 2001; MWLE, 2002) and the interviewees. These include, among other solutions, integrating socio-economic issues in forest management plans (Zake et al., n.d.); involvement of the government, both local and national to strengthen institutions such as the NFA (T. Lain, personal communication, 1 May 2020; R. Ssemmanda, personal communication, 15 April 2020) and to put laws into practice (anonymous, personal communication, 11 April 2020); involvement of local communities (W. Amanzuru, personal communication, 12 April 2020); and creating awareness among community members through Friends of Zoka, as their livelihoods are being threatened by deforestation (J. Anzo, personal communication, 2 May 2020).

The main recommendations for Friends of Zoka are to keep up the work they were already doing mobilising the communities and creating awareness amongst community members to be able to perform change. And in addition, try to see if the NFA can be strengthened so that they can perform their jobs better and protect the Zoka CFR as they should be doing.

Further research in Central Forest Reserves in Uganda could be done to get an overview of the causes of deforestation in CFRs nationally, and to be able to address the deforestation and with that maybe making it happen less often or even make it disappear. Next to this, it would be a good development if the government, NGOs and CSOs, like Friends of Zoka, can work together in a more sustainable way in protecting the environment around us for future generations. In addition, global and local advocacy groups, like Friends of Zoka, should be strengthened and the rights of environmental activists should be better protected worldwide. In this way they can perform their work in a more safely. Furthermore, it would be a good development if the government, NGOs and CSOs, like Friends of Zoka, can work together in a more sustainable way in protecting the environment around us for future generations. Therefore, it might be relevant to do further research on these topics to be able to strengthen advocacy groups and create a more sustainable way in protecting our surroundings.

Preface

Dear reader,

This is my bachelor thesis for Geography, Planning and Environment. During the first semester of my fourth year as a Geography, Planning and Environment student, I choose to do an internship. I did this internship at Bureau Wijland and worked on the Shelter City project from September 2019 until January 2020. With the Shelter City project, sixteen cities offer temporary relocation and shelter, capacity-building tools, security training and safety to human rights defenders (HRDs) worldwide who stand up against human rights violations in their home countries. Nijmegen is one of the cities involved in this project and it was my task to be the mentor for the HRD that stayed in Nijmegen from September to December 2019. The HRD we hosted was William from Uganda. He fights against deforestation in the Zoka Central Forest Reserve with his colleagues in the organisation Friends of Zoka. During my time as a mentor for him, I learned a lot about the situation in Uganda and the problems that he and the local community are facing. I decided that I want to contribute to their fight against deforestation by conducting a research on the area in the form of my bachelor thesis. This research took place from January to June 2020.

I want to thank William for inspiring me and connecting me to his colleagues to interview them, as well as the connections I got because of my internship. Therefore, I was able to reach out to people to take part in the interviews with different points of view. Furthermore, I would like to thank Mirjam Wajsberg for guiding me through the process of this bachelor thesis research by giving me feedback and always being open for questions and discussions.

With doing this research, I hope people become more aware of the situation concerning deforestation in general. Especially in this case of the Zoka Central Forest Reserve in Uganda by reading this bachelor thesis research. I hope you enjoy reading it.

Yara Bon

Nijmegen, *June 23rd, 2020*

Table of contents

Summary	iii
Preface	vi
List of abbreviations	ix
1 Introduction	1
1.1 Framework	1
1.2 Scientific and societal relevance	3
1.3 Research questions	3
1.4 Structure of thesis	4
2 Theoretical framework.....	5
2.1 Tragedy of the commons – Hardin (1968)	5
2.2 Direct causes of deforestation	7
2.3 Indirect causes of deforestation	9
2.4 Governing the commons – Ostrom (1990)	11
2.5 Use of theories in this research.....	12
2.6 Conceptual model	13
3 Methodology	15
3.1 Research strategy	15
3.2 Research material.....	15
3.3 Research methods.....	17
3.4 Data analysis.....	17
4 Research area: Zoka Central Forest Reserve.....	19
4.1 Key institutions and mandates of Uganda’s forestry sector	19
4.1.1 Enabling institutions.....	19
4.1.2 Delivery institutions	20
4.2 Zoka Central Forest Reserve.....	21
4.3 Friends of Zoka	25
4.4 Ugandan government policies	26
4.4.1 The Uganda Forest Policy (2001).....	27
4.4.2 The National Forest Plan (2002).....	28
4.4.3 The National Forestry and Tree Planting Act (2003).....	29
4.5 Summary of the case on the Zoka Central Forest Reserve	30
5 Analysis of research material	32
5.1 General and national causes of deforestation and in the Zoka Central Forest Reserve..	32
5.1.1 General and national causes of deforestation	33

5.1.2	Causes in Zoka Central Forest Reserve.....	34
5.2	The role of the Ugandan national and local government in deforestation	36
5.2.1	National government and Ministry of Water, Lands and Environment.....	37
5.2.2	National Forestry Authority (NFA) and Ugandan Wildlife Authority (UWA).....	38
5.2.3	Local government.....	39
5.3	The role of Friends of Zoka, as a civil society organisation, in deforestation	39
5.4	The mutual influence of the Ugandan government and Friends of Zoka	41
5.5	Possible solutions to prevent deforestation in the Zoka Central Forest Reserve.....	42
6	Conclusion	46
6.1	Answer to research question	46
6.2	Discussion, recommendations, and reflection.....	48
	References.....	50
	Figures	50
	Literature.....	51
	Appendix	Fout! Bladwijzer niet gedefinieerd.
	Appendix 1: interview guide Friends of Zoka members.....	Fout! Bladwijzer niet gedefinieerd.
	Appendix 2: interview guide Tina Lain	Fout! Bladwijzer niet gedefinieerd.
	Appendix 3: interview guide Richard Ssemmanda.....	Fout! Bladwijzer niet gedefinieerd.
	Appendix 4: interview guide Esteban Rossi	Fout! Bladwijzer niet gedefinieerd.
	Appendix 5: codebook ATLAS.ti	Fout! Bladwijzer niet gedefinieerd.
	Appendix 6: document Friends of Zoka	Fout! Bladwijzer niet gedefinieerd.
	Appendix 7: overview of achievements of Friends of Zoka	Fout! Bladwijzer niet gedefinieerd.

List of abbreviations

Abbreviation	Definition
CBO	Community Based Organisation
CFR	Central Forest Reserve
CPR	Common Pool Resources / Common Property Resources
CSO	Civil Society Organisation
DFSs	District Forestry Services
ENR-CSO	Environment & Natural Resources Civil Society Organisation
FoZ	Friends of Zoka
GDP	Gross Domestic Product
IDP	Internally Displaced Person
IUCN	International Union for Conservation of Nature
MWLE	Ministry of Water, Lands and Environment
NFA	National Forestry Authority
NGO	Non-Governmental Organisation
UWA	Uganda Wildlife Authority

1 Introduction

This chapter is an introduction to the research. Firstly, the topic of this research is introduced, and the research area is described shortly. Furthermore, the concept of deforestation and its causes is laid out. The relevance, both societal and scientific, is explained next. Additionally, the research questions and sub-questions are mentioned. Lastly, the structure of the research is outlined.

1.1 Framework

Nature nowadays faces a lot of different threats, ranging from threats caused by humans or by nature itself. One important threat that is occurring in a lot of forests is deforestation. Forests cover approximately one-third of the earth's land surface (Sheram, 1993, p. 4). These forests play an important role in the hydraulic cycle, soil conservation, the prevention of climate change and the preservation of biodiversity (Sheram, 1993). Deforestation is described as the permanent clearing of an area covered with trees (Derouin, 2019), or in other words, it is the conversion of a forest into an alternative permanent non-forested land use (Van Kooten & Bulte, 2000).

Deforestation is currently a global issue, especially because it has a big impact on the environment and its services, which are related to the reduction of biodiversity and the contribution to climate change (Sunderlin, 2005).

In figure two the *Global Forest Change* is shown from the years 2000-2018. The figure shows that more forest has been lost than has recovered over this period. This shows the importance of awareness for deforestation nowadays and that action against it is needed.

In the last few decades, a couple of factors have caused

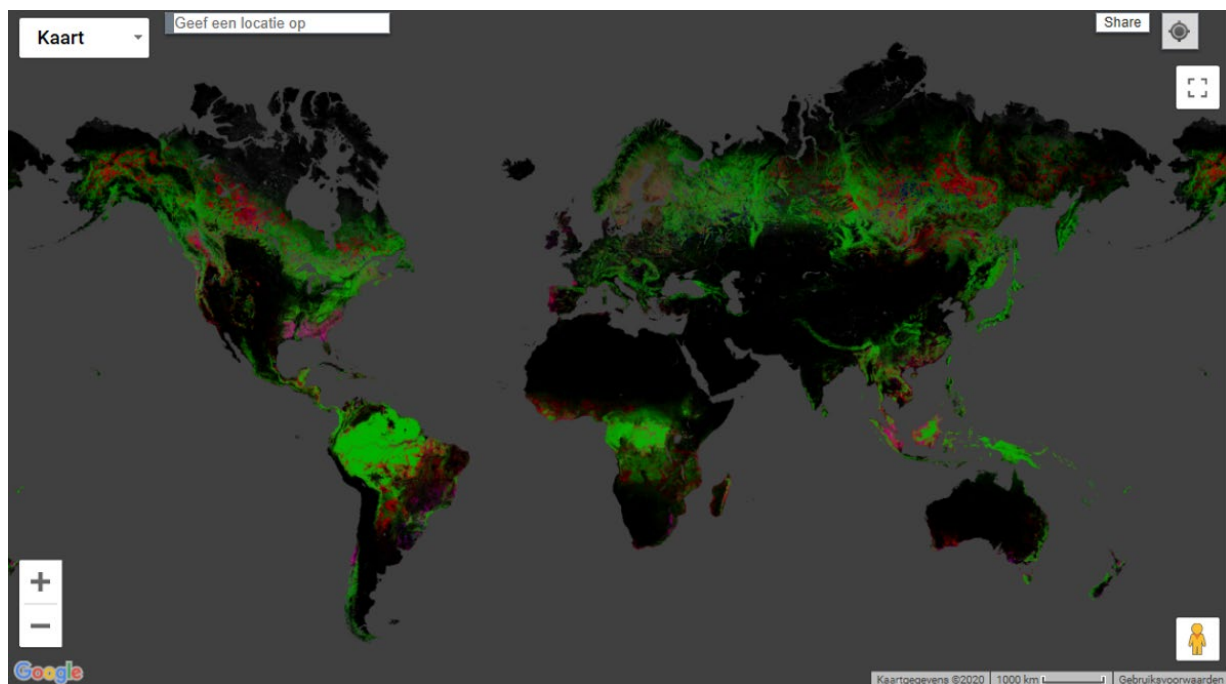


Figure 2 Global Forest Change (2000-2018), Hansen et al.

deforestation in Uganda. These include the growth of the human population and therefore the increase of demand for forest products to use both domestically as industrially. Added to this are the expansion of agricultural land, illegal settlements, and weak forest management capacity. This altogether has influenced the status of the forests in Uganda

nowadays, where changes in the forest extent has happened due to degradation and deforestation over the past century (Obua, Agea & Ogwal, 2010; Zake, Nkwine & Magunda, 1999). Currently the level of Uganda's forestland is approximately around 20 percent of the amount it was in 1890, because of deforestation (Zake et al., 1999). Hence, the creation of forest reserves was done to ensure a continuous supply of forest goods and services for Uganda's inhabitants. A forest reserve is an area of land that is reserved by law for forestry purposes, but policies and laws that are related to forest governance have not been implemented well. Some of Uganda's forest reserves are found on public land (Obua et al., 2010). Thus, civil society organisations (CSOs) that operate in the environmental sector are grouped under their umbrella organisation, this is called the ENR CSOs Network. According to the ENR CSOs Network, there is a weakness in the enforcement and compliance of the national policies because there is a lack of human and financial resources and corruption in the forestry sector (MWLE, 2016).

In this research I will therefore focus on a forest reserve in Uganda: the Zoka Central Forest Reserve. In this forest deforestation is taking place. The forest covers 6145 hectares and is in the Southern Adjumani District, Northern Uganda (Friends of Zoka, 2019). It is the only tropical forest in Northern Uganda and is therefore important for a lot of bird and insect species, as well as for hardwood trees (Friends of Zoka, 2019). In chapter four, a more extensive explanation of the research area is described.

As mentioned earlier, different reasons can be related to the causes of deforestation. According to Chakravarty, Ghosh, Suresh, Dey and Shukla (2012) these can be distinguished into two dimensions: direct and indirect causes of deforestation. Direct drivers are often easier to recognise than indirect drivers. Direct causes can be the following: expansion of farming land, forest and other plantations, logging and fuelwood, overgrazing, fires, mining, urbanisation and/or industrialisation and/or infrastructure, air pollution, encroachment, and lastly, tourism. Indirect causes can be colonialism, exploitation by industrialised countries, the debt burden, overpopulation and poverty, transmigration and colonisation schemes, land rights, land tenure and inequitable land distribution and resources, economic causes, undervaluing the forest, and lastly also corruption and political causes (Chakravarty et al., 2012). In chapter two a broader explanation of deforestation and its causes is described.

Shepherd, Kazoora and Mueller (2013) researched and mapped the causes of deforestation in different parts of Uganda. They found charcoal burning as an important cause of deforestation. Other important causes are pit-sawing, mechanised farming and ranching, the use of wood for brick firing and construction materials for the building of houses. Additionally, bush clearing is happening, which means that people are turning forests into agricultural land (Shepherd et al., 2013). The Ministry of Water, Lands and Environment has published 'The Uganda Forestry Policy' in 2001. The Ministry identified direct and underlying factors of deforestation in this policy document (see also paragraph 4.4.1). These direct factors include forest clearance, over-harvesting, encroachment, urbanisation, and industrial growth. Underlying factors are policy deficiencies, market failures, poor regulation, population growth and migration, and lastly rural poverty (MWLE, 2001). In a more recent policy document the Ministry of Water, Land and Environment stated that the conversion of forest land into other land-use types has been a main cause of deforestation in Uganda, as well as rampant felling of trees for firewood and charcoal

burning. Added to this are issues that are related to unregulated trade in forest products and unsecured tenure rights (MWLE, 2016).

1.2 Scientific and societal relevance

The forest cover in Uganda is decreased from 4.9 million ha in 1990 to 1.8 ha in 2015 (MWLE, 2016, p.49). Annually 1,8% of the forests is being lost (NFA, 2016, p.23). This means that over the period of 25 years, 37% of the forests of Uganda has been lost (MWLE, 2016, p.48). Studies have shown that almost all of the forests outside of protected areas have been cleared. The remaining forests are in protected areas, like forest reserves or national parks (NFA, 2016). As different research has shown (Chakravarty et al., 2012; Shepherd et al., 2013.; MWLE, 2001/2016) deforestation can be caused by different factors, such as the expansion of farming land, logging, urbanisation, exploitation, overpopulation, and land rights. Thus, it is scientific relevant to gain insight into the causes in the Zoka Central Forest Reserve as not much is known about the situation there.

The forests in Uganda are of great importance to the inhabitants. Forests are crucial for the water cycle, agriculture, and the economy of Uganda (Diisi, 2018). The overall contribution of forests is about 6% of the GDP (Obua et al., 2010, p. 854). This includes marketable and nonmarketable values, incomes for Ugandan households, and wood and non-wood products. The implementation of the current policies is weak because of inadequate resource allocation and political interference (Obua et al., 2010). According to Diisi forests are a common good and they should not be primary revenue source (Diisi, 2018). Therefore, it is of societal relevance to learn more about the deforestation of the Zoka Central Forest reserve for the local inhabitants, so that hopefully something can be done against this process. The forest is slowly disappearing, and this impacts the livelihood of local communities (FriendsofZoka, 2019).

1.3 Research questions

As stated before, deforestation has a big influence on both society and the environment. The aim of this research is to attempt to make the situation in Uganda and in the Zoka Central Forest Reserve clearer. When it is clear what the causes of deforestation are in Zoka Central Forest Reserve, action can be taken against it. The focus will be on the causes of deforestation, the Ugandan government, and the Civil Society Organisation (CSO) Friends of Zoka. To see what the Ugandan government policy is on deforestation, its policy documents on forest preservation and deforestation will be studied. Friends of Zoka is a local civil society group that is concerned with the degradation of the Zoka Central Forest Reserve (paragraph 4.3 and appendix 6). Their main objective is to provide advocacy and lobbying on the management of the Zoka Central Forest reserve (FriendsofZoka, 2019). This thesis will attempt to investigate the causes of deforestation in the Zoka Central Forest Reserve and to see what role both parties play in this.

Therefore, the main question will be: *“How do the government and civil society organisations play a role in the causes of deforestation?”*. To answer this question, there are five sub-questions formulated.

1. What are the causes of deforestation in general, in Uganda and in the Zoka Central Forest Reserve specifically?
2. What is the role of the Ugandan national and local government in deforestation?
3. What is the role of Friends of Zoka (as a CSO) in deforestation?

4. How do the Ugandan government and Friends of Zoka influence each other while looking at the work both perform in relation to deforestation?
5. What could be possible solutions to prevent deforestation in the case of the Zoka Central Forest Reserve?

1.4 Structure of thesis

In this chapter, I introduced the topic of deforestation. In chapter two the theoretical framework is laid out. Here, the theory of the tragedy of the commons (Hardin, 1968) was used to look at the different direct and indirect causes of deforestation in Uganda. Also, the theory of governing the commons (Ostrom, 1990) was used. And a conceptual model was added to define the most important concepts that are used, with this conceptual model I have explained these concepts, and the relation between them. In chapter three, the methodology is written down. This includes the research strategy, research materials and research methods being used, as well as how the data was analysed. In chapter four the research area and case study are defined. To do this, the key institutions of Uganda's forestry sector and the Zoka Central Forest Reserve are highlighted, as well as the civil society organisation Friends of Zoka and the Ugandan government policies on forest management. The analysis of the results is shown in chapter five and is explained based on the five sub-questions. Finally, in chapter six, the conclusion, discussion, and recommendation, and lastly, the reflection are written down.

2 Theoretical framework

In this chapter the theoretical framework is explained, which forms the basis for this research. I will first explain the theory of the tragedy of the commons (Hardin, 1968). Then, I will look at the direct and indirect causes of deforestation in general, as well as the policy of the Ugandan government regarding deforestation and the key institutions involved in the Ugandan forestry sector. Direct causes are referred to as sources of deforestation, these are often relatively easy to identify. The indirect causes are usually the main drivers behind deforestation, these often cause the most disagreement and are harder to identify than direct causes (Chakravarty et al., 2012). Lastly, the theory of governing the commons (Ostrom, 1990) will be explained and all will be linked to the topic of deforestation and the conceptual model.

2.1 Tragedy of the commons – Hardin (1968)

In this paragraph, I will lay out the theory of the tragedy of the commons of Hardin (1968). Different researchers have related deforestation to the tragedy of the commons of Hardin before (e.g. Otum, Frederick & Martina, 2017; Perez-Verdin, Kim, Hospodarsky & Tecle, 2009; Southgate & Runge, 1990). Deforestation is therefore a fitting example of the tragedy of the commons (Otum et al., 2017). In the following I will explain the theory and why this is the case.

The example used by Hardin (1968) to explain a tragedy of the commons is the following: 'Imagine a pasture that is open to all herdsmen of a certain area. All these herdsmen want to have as many cattle as possible on the common pasture. Each herdsman seeks to maximize his profit of the cattle on the common pasture. When a herdsman lets more cattle graze on the field, he gains more income because of this and therefore wants to add as many animals as is possible. On the other hand, adding an extra animal can cause overgrazing when all the herdsmen sharing the pasture are adding one extra animal to the field. They all want to increase their herd, but the pasture is not big enough for all the animals. Overgrazing will happen due to the high number of animals, which causes none of the herdsmen to make a full profit of their animals, because these animals do not get enough food of the pasture. And because everyone is overusing the field by putting too many animals on it, the profit per person lessens and a tragedy of the commons happens (Hardin, 1968).' As Hardin states: "*Freedom in a common brings ruins to all*" (1968, p.162). The benefits to an individual make society, as a whole and of which the individual is part of, suffer (Hardin, 1968).

Now imagine this case being applied to forests and deforestation. The forest can be compared to the pasture, both being a common pool resource. In these two cases individuals, the herdsmen or users of the forest, act independently and rationally for their own self-interest. This results in depletion of common resources, being the pasture and the forest, which causes a tragedy of the commons to occur (Otum et al., 2017). To go deeper into this, a common-property resource must have two characteristics. The first one is excludability, which means that access is being controlled. In the case of National Forest Reserves in Uganda, the control of access is being managed by the National Forestry Authority and the district forest offices. And the second is that the common-property resource must be subtractable, which trees are. Thus, each user of the common-property resource is capable of subtracting welfare from other users, where the one subtracting is benefiting and the others face negative effects (Feeny, Berkes, McCay & Acheson,

1990). Forest resources need to be managed in a sustainable way. When this does not happen environmental problems, like deforestation, will occur (Otum et al., 2017).

Hardin's arguments on tragedy of the commons still have a great influence nowadays as he is a much cited academic in the fields of social and environmental sciences. Important here is the fact that he related the tragedy of the commons to all environmental problems in which nature could be seen as a common. Therefore, the solution to managing environmental problems, like deforestation, according to Hardin, could be in some form of a super-police state for the environment, or private property rights on environmental systems or objects. People could choose coercion, oppress themselves into control, in the case of a super-police state, or turn to strict forms of inheritance and private property because then the consequences of poor decision-making processes will be felt by the owner of that property and no one else, like with privatisation. Hardin concluded that oppression would not be the best solution. He states that privatisation would be the best solution available in managing the environment (Robbins, Hintz & Moore, 2014).

Additionally, Feeny et al. (1990) interpret Hardin's views on the management of environmental problems like Robbins et al. (2014) confirming that he [Hardin] identified two general solutions to the tragedy of the commons, these being privatisation and socialism. The first meaning involvement of private enterprises and the latter control by the government (Feeny et al., 1990). Next to privatisation, where the government can establish a system of private property rights so that ownership of the resources would be delineated, the government can also play a role in preventing a tragedy of the commons from happening with either constraining consumption by directly managing this, or by regulating the use of resources (Frischmann, Marciano, & Ramello, 2019). The latter is referred to as socialism by Feeny et al. (1990). The management of environmental problems should be done to avoid resource degradation which would otherwise be inevitable in Hardin's view (Feeny et al., 1990).

However, there has been critique of the work of Hardin. He affirmed the need for control of population growth (Frischmann et al., 2019). According to Bonan (2018) the pasture of Hardin (1968) can be interpreted as a metaphor that is trying to explain the population growth dynamics of the world. And with that the consequences that population growth has in terms of ecological footprint (Bonan, 2018). McClennen (2019) agreed with this interpretation of Hardin's work on the tragedy of the commons by saying that Hardin used the cattle-grazing metaphor in relation to population control. And thus, Hardin is saying that there should be an authoritarian regulation on population growth. Moreover, McClennen (2019) critiques that Hardin tried to make it clear that immigration should be seen as an environmental issue. She also mentions that the work of Hardin is missing the biopolitical perspective in critical conversations about the commons. This means that aspects of racism and notions of collective land rights are not being considered. Hardin frequently pointed out that non-white people were a threat to overusing and abusing scarce resources in a way that there would be less for white people (McClennen, 2019). Because of this, different academics (Frischmann et al., 2019; Bonan, 2018; McClennen, 2019) have critique on the work of Hardin, especially on the part where he suggests that population growth needs to be controlled.

Altogether this means that the tragedy of the commons-theory of Hardin is still relevant today. This is because he was able to relate the tragedy of the commons to environmental problems, in

which nature could be seen as a common pool resource. But the solutions, like privatisation or that the government should be in charge, can be interpreted as racist and he has been criticised for this. In this research the theory of tragedy of the commons is only used as a theory to explain the case of deforestation, and solutions for deforestation were found in the work of Ostrom (1990), as is described in paragraph 2.4.

2.2 Direct causes of deforestation

As stated in the introduction many different factors can cause deforestation. Chakravarty et al. (2012) mention the following direct causes of deforestation: the expansion of farming land, forest and other plantations, logging and fuel wood, overgrazing, fires, mining, urbanisation and/or industrialisation and/or infrastructure, air pollution, encroachment, and tourism. These factors will be explored in the following paragraph.

Expansion of farming land. One of the main causes of deforestation is the conversion of forest land into other land types such as agriculture (MWLE, 2016). Back in 2001 there were high rates of forest clearance to make room for agricultural land instead (MWLE, 2001). The expansion of agricultural land can be linked to many deforestation causes as it is the leading land-use change. These changes include forest conversion for permanent cropping, besides cattle ranching and shifting cultivation (Geist & Lambin, 2002). Shifting agriculture, also known as slash and burn agriculture, causes deforestation as well. Nowadays this shifting agriculture causes soil degradation because the soil is exhausted of nutrients (Chakravarty et al., 2012). Settlements and the harvesting of forest products continued to grow. This had as a consequence that the forests around villages were degraded and converted into farming land (Shepherd et al., 2013). The expansion of farming land also happens because of the fact that the owners make more profit from converting these forest areas to farmlands, instead of retaining them as forests (MWLE, 2016). The transformation of forests into agricultural land is often viewed as the main source of deforestation of tropical forests, contributing up to 60% of the total (Chakravarty et al., 2012, p.7).

Forest land and other plantations. Most of the plantations are established on land that used to be a forest. So meanwhile trees are planted back on plantations, these trees also will be cut down again and this is putting pressure on the land. The forestry is replacing the natural forests that were there before and causes biodiversity loss. In addition, the construction of roads to get to the plantation causes deforestation because trees are cut down to make space for these roads (Chakravarty et al., 2012).

Logging and fuel wood. In Central Forest Reserves in Uganda, illegal charcoal burning and rampant felling of trees for firewood is taking place. In the district of Adjumani, woodlands have been put under pressure for firewood (MWLE, 2016). Shepherd et al. (2013) state that pit-sawing, charcoal production, and timber felling cause deforestation. Illegal logging is a global forestry issue (Tacconi, 2012). Most of the logging in Uganda is done illegally, both from Central Forest Reserves as from private lands (Turyahabwe, Kakuru, Asiimwe & Byakagaba, 2015).

The term illegal logging refers to different illegal activities that are related to forest ecosystems, forest industries, and timber and non-timber forest products (Tacconi, 2012). Logging is done illegally when timber is harvested, transported, bought, or sold in violation of national laws (Brack, 2005). Illegal logging is caused by different factors such as institutional problems, lack

of government capacity, corruption, business, timber trade and economics in relation to forest management (Tacconi, 2012). Illegal logging and timber trade are a main cause of deforestation in Uganda (Turyahabwe et al., 2015).

Overgrazing. Overgrazing happens more often in drier areas of the tropics (Chakravarty et al., 2012, p.3). Trees in the area are cut to provide food for animals. Furthermore, people are sharing land and keep as many animals as possible on this piece of land to maximize their profits, which is a clear example of a tragedy of the commons. These animals eat all the vegetation before it gets the chance to grow back, which causes the grass to disappear and turns these areas into sand (Chakravarty et al., 2012).

Fires. Fires are an easy way to clear forests for agricultural land and developing pastures (Chakravarty et al., 2012). The fires are likely to be caused due to careless bush clearing (Shepherd et al., 2013). And when fires are not properly managed it can lead to deforestation (Chakravarty et al., 2012).

Mining. For mining, only a small piece of land is required and therefore it is not seen as a major cause of deforestation. Due to mining, the area is likely to be developed. Consequently, the population in that area can grow and this mostly causes deforestation. To be able to reach the mines, infrastructure, like roads, railways, bridges, and airports, is needed as well, which reduces space for the trees. Furthermore, wood can be used as a fuel for the mines, this wood can be grown on plantations. But as described under 'forest land and other plantations' this leads to deforestation (Chakravarty et al., 2012). On the contrary, I would argue that mining is rather an indirect cause of deforestation instead of a direct cause, because the development leads to population growth that can cause deforestation and the small piece of land that is used does not cause deforestation on that scale.

Urbanisation and/or industrialisation and/or infrastructure. Next to the transformation of forests into agricultural land, transforming the land into land suitable for settlements and urbanisation is a cause of deforestation (MWLE, 2016). Urbanisation and industrial growth are putting pressure on the forests in Uganda as there is an increasing demand for industrial land (MWLE, 2001). In addition to this, wood is used by individuals for domestic purposes to build houses (Geist & Lambin, 2002). Shepherd et al. (2013) also state that trees were cut for brick firing, house building and construction materials for internally displaced persons (IDPs) and that forests close to IDP camps were disappearing due to this.

Air pollution. Air pollution can cause trees to die because the air quality of the area the trees are growing in is not containing enough nutrients (Chakravarty et al., 2012).

Encroachment. In the 1970s and 1980s encroachment was taking place in the forests in Uganda. People were occupying land which was owned by the government. This led to deforestation as people were settling down in the forests. The boundaries of the forests were and still are not demarcated clearly, which causes people to encroach the forests deliberately or accidentally. This can be solved by demarcating and rationalising the boundaries to make it clearer (MWLE, 2001).

Tourism. National governments of tropical and sub-tropical countries open their national parks and sanctuaries for tourists as it is an easy way of gaining income. Next to that, companies and resorts exploit the forests for profits. Tourists are shown around during tours in the forests

offered by the companies and resorts, and the tourists are not always taking care of the nature and may destroy it, sometimes unintentionally. To make space for eco-tourism, infrastructure development takes place and therefore trees must be cut down (Chakravarty et al., 2012).

2.3 Indirect causes of deforestation

Chakravarty et al. (2012) highlight the following indirect causes of deforestation: colonialism, exploitation by industrialised countries, the debt burden, overpopulation and poverty, transmigration and colonisation schemes, land rights, land tenure and inequitable land distribution resources, economic causes, undervaluing of the forest, and lastly, corruption and political causes.

Colonialism. Former colonies of European countries are nowadays developing countries, and tropical rainforests can be found predominantly in these countries. The indigenous people had their own system of land management, but these were destroyed once the colonists came to these countries. The former self-sufficient economies of the developing countries were transformed into zones of agriculture and export for the West. Nowadays, in most countries this is still the case, be it in a different form of exploitation (Chakravarty et al., 2012).

Exploitation by industrialised countries. Wealthy countries and former colonising countries have used all their natural resources and are now depending on the resources of financially poorer countries. The governments of these poorer countries are trying to maximise their export and revenues and are therefore exploiting the natural resources that can be found in these countries (Chakravarty et al., 2012). Internationally there is a big demand for wood products. The international trade of wood products is an important driving force behind both the legal and illegal exploitation of forest products worldwide, a large amount of it being illegal harvested timber. And this trade is driven by Western consumption. It is hard to make a difference between legal and illegal timber due to the high volumes of illegal timber that are entering the global trade market. This gives a bad reputation to the sustainable and legitimate timber (Scotland & Ludwig, 2002).

The debt burden. Financially poorer countries mostly have an international debt of a high amount of money and must repay these in some form. Most governments exploit their natural resources to be able to pay off these international debts or let richer countries come to exploit their natural resources themselves (Chakravarty et al., 2012).

Overpopulation and poverty. Poverty and overpopulation are pointed out as main reasons behind deforestation (Chakravarty et al., 2012). The growth of populations increases the demand for agricultural land and firewood energy (MWLE, 2001). It is suggested that better economic development and less poverty will reduce population growth. Population growth requires more food, and therefore more agricultural land to produce this food, which results in deforestation when creating agricultural land. Most of the agricultural land is owned by the elites of the poorer countries, which leaves poor farmers no other choice than to cut down trees in tropical forests for agricultural land. Deforestation is therefore mostly happening in poorer regions since there is an uneven distribution of wealth in developing countries (Chakravarty et al., 2012).

Transmigration and colonisation schemes. Migrants coming to other countries make the population grow, which asks for more food and therefore more agricultural land as stated above (MWLE, 2001). The growth of the population brings more pressure to the forest frontier. It could

also be said that the new inhabitants might not take care of their environment and the conservation of the forests because the demand for food increases, which speeds up the process of deforestation (Chakravarty et al., 2012).

Land rights, land tenure and inequitable land distribution resources. The cultivators of land often do not own the land and they are removed once the owner shows up to claim their land. This gives them no other choice than to leave and clear another piece of forest to survive. In many countries the governments oversee controlling and regulating the forests but do not have the means or power to do so. This can lead to the tragedy of the commons (Chakravarty et al., 2012) as there is no regulation and one can use the forest how one wishes (Hardin, 1968). In Uganda, there are similar policy deficiencies about land tenure in the private sector and local communities, the access rights of lands, and the responsibility on resource management as the policies are not being supported (MWLE, 2001).

Economic causes – development/land conversion value, fiscal policies, markets, and consumerism. Economic factors are stated to be important underlying factors of deforestation (Geist & Lambin, 2002). Market failures, with inappropriate royalty rates, poor market information, trade restrictions and hidden subsidies that misconstrues the market for forest products are examples of this (MWLE, 2001). The commercialisation of the timber markets and market failures are often reported as indirect causes of deforestation. The timber market is driven by national and international demands, which makes this an indirect cause (Geist & Lambin, 2002). Many development policies of governments have failed because it supported those who already have land, power, influence, and political clout. The rural poor therefore profit less from these policies while they are the ones that need the support. Economic development is said to cause more deforestation to meet food requirements. Tropical deforestation is caused by the drive of maximising profits in the agricultural sector and the way of consuming in developed countries also adds to this. Products like coffee, sugar, bananas, oil palm and rubber are products that are demanded by the developed countries (Chakravarty et al., 2012).

Undervaluing the forest. The national governments and the inhabitants do not value the forests enough (Chakravarty et al., 2012, p.14). The extraction of non-wood products of the forests is not profitable enough to not choose to clear the forests. There is no good option to have the forests be profitable and not clearing the trees (Chakravarty et al., 2012). The forest products are undervalued and if no investment and protection is taking place for the forests, the situation is declining fast. There is a public indifference towards forest environments (Geist & Lambin, 2002).

Corruption and political cause. Governance in the forestry sector in Uganda has a few issues that are associated with illegal and unregulated trade of forest products (MWLE, 2016). There is poor regulation because institutions are weak and there is not enough funding and capacity to make these regulations better (MWLE, 2001). Illegal activities are taking place, for example the approval of contracts, sales of harvesting permits, under-pricing of wood, harvesting protected trees, and smuggling of forest products. Which allows illegal logging and the processing of forest materials without a licence (Chakravarty et al., 2012).

2.4 Governing the commons – Ostrom (1990)

In this paragraph I will explain how commons should be governed according to Ostrom (1990). Furthermore, a reflection is provided on Hardin's theory of the tragedy of the commons in relation to Ostrom's 'governing the commons' (1990).

Ostrom critiques Hardin's theory of the tragedy of the commons (1968) by arguing that centralisation and privatisation as policy prescriptions are mostly used as metaphors (Ostrom, 1990). Feeny et al. (1990) state that control by the government can be seen as socialism. Ostrom, however refers to this as centralisation. Despite Ostrom's critiques on Hardin, Ostrom tried to understand under what circumstances small communities could manage their common resources in a successful way to avoid a tragedy from occurring (Bonan, 2018). Ostrom (1990) wrote about the management of common-pool resources (CPR). The term 'common-pool resources' here is related to a natural or man-made resource system, such as fishing grounds, grazing areas and lakes (Ostrom, 1990). To prevent a tragedy of the commons, Ostrom argues that a structure of decision-making arrangements can be set up in the process of individual decision-making regarding the management of common-property resources. To make sure everyone involved in the management of CPR, measures should be set up to involve everyone in the use of the commons and give a say in the management of the common property (Frischmann et al. 2019). An example of a measurement that could be taken is paying taxes, so that the publicly available goods and services can be managed (V. Ostrom, 1973). If no measures are put in place, the management will end up in a negative-sum game. This means that one person gains benefits in the process of individual decision-making, while the others in the group and the group as a whole, ends up having less profit of the CPR (Frischmann et al., 2019).

While Hardin (1968) states that central regulation is necessary, Ostrom (1990) is more critical on this aspect. The latter states that nothing is mentioned in Hardin's argumentation about the way this central agency, for example a government, should be constituted. Other questions that Ostrom raises on centralisation are: what authority should the central agency have? How should the limits of this agency be maintained? How will the central agency get information? How should these central agents be selected and motivated to do what is expected from them? How will the performances of these agents be managed, and how and for what will they be rewarded or sanctioned (Ostrom, 1990)?

While looking at privatisation, Ostrom recalls that the necessity of property rights does not cover how these rights should be defined, how the different attributes involved will be measured, who will be paying for the costs of not-property owners, how conflicts about the property rights will be handled, and lastly how the interests of the owners will be organised. Hence, she formulated eight design principles in the self-governing of common-pool resources, as is shown in figure three (Ostrom, 1990). These principles are looked at in finding solutions against deforestation.

Table 3.1. *Design principles illustrated by long-enduring CPR institutions*

1. Clearly defined boundaries	Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.
2. Congruence between appropriation and provision rules and local conditions	Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.
3. Collective-choice arrangements	Most individuals affected by the operational rules can participate in modifying the operational rules.
4. Monitoring	Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.
5. Graduated sanctions	Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.
6. Conflict-resolution mechanisms	Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.
7. Minimal recognition of rights to organize	The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.
<i>For CPRs that are parts of larger systems:</i>	
8. Nested enterprises	Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

Figure 3 Design principles illustrated by Ostrom (1990).

2.5 Use of theories in this research

In this research, I chose to first create an overview of direct and indirect causes of deforestation from Chakravarty et al. (2012). In addition, I chose to use the tragedy of the commons and the governing of commons as theories because it can be applied to deforestation. Furthermore, it is interesting to apply in this case as it might bring new insights to the situation in the Zoka Central Forest Reserve in Adjumani, Uganda, as not much research has been conducted in this context. Forests can be defined as a common pool resource and a tragedy can occur in the management of this common pool resource.

I chose to create an overview of the direct and indirect causes from Chakravarty et al. (2012) to find out what the causes of deforestation are in general. With the overview of these causes, I could see which of these causes are behind the deforestation at the national level of Uganda and in the specific case of the Zoka Central Forest Reserve.

In my opinion, the theory of Hardin (1968) helps to understand and explain the situation on deforestation in Zoka Central Forest Reserve. In paragraph 2.2 and 2.3, the direct and indirect

causes of deforestation are described. Additionally, Ostrom (1990) provides possible solutions with the design principles to avoid a tragedy of the commons from happening and how CPR can be managed.

To answer the main question of this research “*How do the government and civil society organisations play a role in the causes of deforestation?*” these theories will be used for answering the four out of five sub-questions about the causes of deforestation on the different levels: causes in general, in Uganda and in the Zoka Central Forest Reserve, the roles of the Ugandan national government, the local government, and Friends of Zoka (as a CSO), and, lastly on possible solutions that could prevent deforestation in the case of the Zoka Central Forest Reserve.

The first sub-question can be answered by looking at the direct and indirect causes in paragraph 2.2 and 2.3. During the interviews with experts from different policy and academic fields, the role of the Ugandan national and local governments and civil society organisations like Friends of Zoka have been talked about. In addition, possible solutions to deforestation and the role of the government and civil society organisations were mentioned. Thus, the other three sub-questions are answered using the interviewee’s answers, in combination with the academic literature and the analysis of the government’s policy documents. When presenting my findings in chapter five I will go deeper into their roles and possible solutions.

2.6 Conceptual model

In this paragraph, I explain my conceptual model and describe and operationalise the most important concepts used in this research.

I have chosen to not include a visual conceptual model. Instead, I found it better to describe the relations between the different concepts that are used within this thesis research, because it was difficult to explain this visually due to many possible relations between the causes of deforestation and the actors involved in deforestation. In this paragraph, the most important concepts are described as well as the relationship between them. The operationalisation of the different concepts is provided further below.

The most important concepts in this research are:

- Deforestation
 - Deforestation is defined as: ‘the permanent clearing of an area covered with trees (Derouin, 2019). It is the conversion of a forest into an alternative permanent non-forested land use (Van Kooten & Bulte, 2000)’.
- Tragedy of the commons
 - Tragedy of the commons is defined as: ‘depletion of a common pool resources because individuals act independently and rationally for their own self-interest (Otum et al., 2017, p.2)’.
- Common pool resources
 - Common pool resources are defined as: ‘the term ‘common-pool resources’ here is related to a natural or man-made resource system (Ostrom, 1990, p.)’.

- Civil society organisations (CSOs)
 - Civil society organisations are defined as: ‘voluntary identities that are formed by people in the social sphere. They are non-state, not-for profit, and separate from the state and the market (UN Guiding Principles, n.d.)’.
- Ugandan Government
 - The Ugandan Government is defined as: ‘all power and authority of the Government and its organs derive from the Constitution, which in turn derives its authority from the people who consent to be governed in accordance with this Constitution’ (Republic of Uganda, 1995).

Forests are seen as a common pool resource and common pool resources can end up in the tragedy of the commons-situation. The tragedy of the commons as a theory can be related to deforestation, as a tragedy of the commons might be a cause of deforestation taking place, in that way it may influence the deforestation. The CSOs and the Ugandan Government are important to mention as a concept here as well because they seem to play a role, one way or another, in the deforestation that is happening in Uganda (ENR-CSO, 2017). These relations have been looked at during the interviews with specific questions related to this by creating a theme per different concept with specific questions in that theme, and the outcomes of these interviews are described in chapter five. Ostrom’s ‘governing the commons’ theory is interesting as it offers possible solutions to prevent or solve deforestation.

3 Methodology

In chapter two, key concepts and theories used were explained. In this chapter, the methodologies used in conducting this research are described. Besides, the reasons behind the decisions that were made in the research process are elaborated here. This research is done in a qualitative way, which means that to answer the main and sub-questions qualitative methods are used. The methods used in this research are interviews and literature studies.

3.1 Research strategy

As stated above, qualitative methods are used in this research. Qualitative research should be used when a problem or issue needs to be explored. And when a complex and detailed understanding of the issue is needed, especially for individuals to be empowered and share their stories (Creswell, 2007). Thus, conducting qualitative research for the case of deforestation in the Zoka Central Forest Reserve is the best approach.

One way of conducting qualitative research is by doing a case study. Case study research is defined as the study of an issue by exploring this with a case. In this research, a single instrumental case study is done by focusing on one specific issue, in this case deforestation, and by illustrating this in one case, being the Zoka Central Forest Reserve (Creswell, 2007; Vennix, 2016). By using a case study it is possible to do in-depth research on a certain issue, and to cover the circumstances of the specific case (Creswell, 2007). Typically for a case study is looking at a subject from different points of view and using this to find out why something is the way it is (Vennix, 2016). I chose to do a case study because in this way I was able to do in-depth research on the case of deforestation in the Zoka Central Forest Reserve. And with this I tried to find out why deforestation is happening there, with looking at the causes and the actors involved.

Different types of empirical sources are used in conducting a case study, such as interviews, literature, and documents (Vennix, 2016). In paragraph 3.2 I will go deeper into the research material that is being used in this case study.

3.2 Research material

Multiple sources of data are used in this research. This is typical for qualitative research because the researcher does not rely on just one source and it makes in-dept research possible. Research materials that are used in this research are literature, documents, and interviews (also as method) (Creswell, 2007). The type of literature that is used is scientific, including books, papers, and journal articles mainly from the research disciplines of geography and environmental studies that focus on deforestation and the management of common property resources. The literature was used for the theoretical framework. The documents used, were policy documents of the Ugandan government about forestry management and documents shared by Friends of Zoka like reports on their achievements and currently running projects. The policy documents are used to lay out the policies that are operative in Uganda for the research area. More on this research area is described in chapter four.

The interviews conducted were semi-structured interviews, which made it possible to go deeper into certain topics related to these questions by asking follow-up questions on what was being said, instead of just asking the questions that were written down when doing a structured interview. Thus, I chose to do this because in this way I would get the most information of the

interviewees. I have distinguished a couple of themes related to the main question to talk about during the interviews. These themes all contained a few important questions that should be answered. The themes were: deforestation at different levels (global/national/local), the role of the government, the role of Friends of Zoka, and lastly, solutions for deforestation. In appendixes 1, 2, 3 and 4, the interview guides used can be found. I used four interview guides for six interviews, as I could use the interview guide for members of Friends of Zoka three times (Appendix 1).

The interviews were all audiotaped, after the interviewees gave permission for this. Because of this, afterwards transcription of the interview was possible to get a good overview of what was being said during the interview and what exactly should be used for the research. These interviews were conducted through either Zoom or WhatsApp phone or video call, because interviewees were in Uganda, Colombia, and the Netherlands. Three of the interviewees from Uganda did not have a strong enough internet connection to do a Zoom call and that is why I chose to do a WhatsApp phone or video call and record the interview with a recording program on my laptop, and audiotape it in that way. Due to the pandemic caused by the coronavirus, covid-19, we were advised to social distancing and therefore having as less as possible face to face contact with others. This was also during the period of conducting my interviews. Even though one of the interviewees is located in the Netherlands the interview was conducted through Zoom because of this.

In total six interviews were conducted. Four of the interviewees were in Uganda, one in Colombia and one in the Netherlands. All the conversations were held in English. Because of my internship with the Shelter City program, I met William Amanzuru. He is a human and environmental rights activist for the civil society organisation Friends of Zoka. More information on Friends of Zoka and their work can be found in chapter four, as well as in appendixes 6 and 7. I interviewed him and two colleagues of Friends of Zoka, whom I got in touch with through William Amanzuru:

- William Amanzuru: he is the Team Leader of Friends of Zoka. He is the founder of FoZ back in 2016
- James Anzo: he is the human rights vocal person for Friends of Zoka. He is already involved with FoZ since the start and just got a position in the management of FoZ
- Anonymous: employee of Friends of Zoka that wants to stay anonymous due to security reasons

The other three interviewees were from different backgrounds. I got in touch with them through personal contacts, what also is known as snowballing. I chose to interview the following persons, because these interviewees have experience in the topics of environmental justice, deforestation, and forest management:

- Tina Lain: she works at IUCN in the Netherlands as a senior expert on environmental justice and knows a lot about the work of CSOs
- Richard Ssemmanda: he works at Ecological Trends Alliance, which is a registered national non-governmental organisation in Uganda. He works as the director of programmes and operations
- Esteban Rossi: he is a Colombian-born Yale University Master graduate in Forestry who wrote his master on forest management

3.3 Research methods

For each of the research questions a description of which material is used for what sub-question is elaborated below.

1. What are the causes of deforestation in general, in Uganda and in the Zoka Central Forest Reserve specifically?
 - Information on the general and national level of Uganda was gained through a scientific literature study of deforestation and its direct and indirect causes, as well as by the interviews and the governmental policy documents.
 - The case information was gained through documents on the Zoka Central Forest Reserve, as well as by doing interviews with local informants.
2. What is the role of the Ugandan national and local government in deforestation?
 - This question was answered by using policy documents of the Ugandan government and by scientific literature that is written about the government's policies on deforestation. In the interviews this topic was also discussed.
3. What is the role of Friends of Zoka in deforestation?
 - This question was answered by doing interviews with people involved in the Friends of Zoka community, as well as others involved with CSOs or management of forests in Uganda. Next to this, also by documents that are available about the work that Friends of Zoka have done and/or are doing now, like reports and/or newspaper articles.
4. How do the Ugandan government and Friends of Zoka influence each other while looking at the work both perform in relation to deforestation?
 - This question was answered through the interviews, and by looking at the policy documents of the involvement of CSOs in Uganda. And, by comparing the answers on the second and third sub-question.
5. What could be possible solutions to prevent deforestation in the case of the Zoka Central Forest Reserve?
 - This question was answered through the policy documents, the scientific literature, and the answers of the interviewees.

All of this together should answer the main question of this research: *'How do the government and local civil society organisations play a role in the causes of deforestation?'*

3.4 Data analysis

After all the data is gathered it must be analysed. Analysis in a case study consists of making a detailed description of the case and its setting (Creswell, 2007). In chapter four a detailed description of the case is given, with a case summary in paragraph 4.5.

All the interviews that were done have been recorded. In this way, they could be transcribed afterwards. This should be done to be able to perform an analysis of the conducted interviews and the gained information through them. The interviewees gave their consent to record them during the interview.

The analysis of these transcripts was done with the program ATLAS.ti by giving codes to these transcripts and looking for patterns between the interviews. It is important to look for correspondence between the data, and by giving codes to data through a computer program helps to make comparisons among code labels (Creswell, 2007), in this case with the program ATLAS.ti.

I performed the following steps in the analysis:

1. I created a memo, so that I could write down ideas for codes that could be used in analysing the interviews
2. I looked at the theory in chapter two
3. I distinguished two 'code groups' of causes of deforestation, and added these to the memo:
 - a. One group contained the ten direct causes of deforestation (paragraph 2.2.)
 - b. The other, the ten indirect causes of deforestation (paragraph 2.3.)
4. I looked at the overview of institutions that play a role in forest management in Uganda as described in paragraph 4.1., and added these to the memo
5. I divided these institutions into two groups:
 - a. One group containing enabling institutions (paragraph 4.1.1.)
 - b. The other, the delivery institutions (paragraph 4.1.2.)
6. I looked at other important codes that should be used and added the following codes to the memo:
 - a. The work of Friends of Zoka (paragraph 4.3.)
 - b. The policies of the Ugandan government (paragraph 4.4.)
 - c. Solutions to deforestation
7. At this point, I had a clear overview of possible codes that I could use and created a list of these codes
8. I began with analysing the transcript with these codes by using the 'list coding' option and selecting a suitable code out of the list every time
9. I added more codes via 'open coding' for words that occurred more frequently and needed to be pointed out as well to be able to take this into account during the analysis during the process of coding.

An overview of all the fifty codes can be found in Appendix 5. The most frequently occurring codes are 'Work of Friends of Zoka', 'national government', 'solutions deforestation' and 'role of communities'. The information gained from the interviews was used to answer the main question and the sub-questions as described in paragraph 3.3.

Next, the results are described in chapter five. Here I created structure by answering each sub-question using the information gained through the interviews as well as the literature and policy documents. To demonstrate the findings, I used quotes of different interviewees and paraphrased what was being said to make an overview of the results and to make sure everything became clear. Furthermore, I used literature to support the quotes used.

4 Research area: Zoka Central Forest Reserve

In this chapter I will go deeper into the research area. First, I have mentioned the forestry sector's key institutions and mandates. Second, I described the Zoka Central Forest Reserve, the importance of it locally and what is currently happening in this forest regarding deforestation. In addition, I explained what Friends of Zoka is and what kind of work this organisation does, and how this relates to deforestation in the area. In this chapter I have also laid out the Uganda government's policies for forest management by shortly describing three important policies that are currently in force in Uganda: the Uganda Forestry Policy (MWLE, 2001), the National Forestry Plan (MWLE, 2002), and the National Forestry and Tree Planting Act (MWLE, 2003).

4.1 Key institutions and mandates of Uganda's forestry sector

Many stakeholders are involved in the forestry sector of Uganda. These stakeholders can be separated into two groups according to the Ugandan Ministry of Water, Lands and Environment (2016): enabling institutions and delivery institutions. In this case, the enabling institutions are the institutions that produce and facilitate in the Ugandan forestry sector. And the delivery institutions are responsible for the implementation of governmental plans, its policies, and the programmes in the forestry sector (MWLE, 2016). In this paragraph, I have explained more about these institutions.

4.1.1 Enabling institutions

According to the Ministry of Water, Lands and Environment (2016) there are a couple of enabling institutions: the Ministry of Water, Lands and Environment (MWLE) itself, the Ministry of Tourism, Wildlife and Antiquities, Ministry of Energy and Mineral Development, Ministry of Finance, Planning, and Economic Development, development partners and Civil Society Organisation (CSOs) (MWLE, 2016). I have chosen to highlight the Ministry of Water, Lands and Environment and the CSOs in my thesis because they seem to be the most important in the case of the Zoka Central Forest Reserve, as the Ministry of Water, Lands and Environment wrote the policies described in paragraph 4.4 and Friends of Zoka is a CSO.

Ministry of Water, Lands and Environment (MWLE). The Ministry is responsible for the formulation and oversight of policies, stands and legislation for the forestry sector. It must coordinate and supervise the technical support and training for local governments. The inspection and monitoring of local governments and the performance of the NFA in the forestry sector must be done by the Ministry. Two other main roles of the Ministry are the mobilisation of funds and other resources for the forestry sector and the promotion, public information, and advocacy for the forestry sector. However, it is stated that the Ministry has not lived up to its expectations in relation to its tasks. Consequently, the deforestation and forest degradation rates have not been that high before. In addition, the Ministry made it possible that investments in the forest sector were done in commercial plantations in forest reserves and on private land. On top of that communities have also done more tree planting (MWLE, 2016).

Civil Society Organisation (CSOs). These organisations have a great mobilisation potential and are therefore part of the enabling institutions, by playing an important role in advocacy and forestry advisory services. The CSOs working in the environment sector are grouped together in the ENR CSO Network (MWLE, 2016). The ENR CSO Network stands for 'Environment & Natural Resources Civil Society Organisation Network', founded in 2010. Its vision is that Uganda's natural

environment can provide goods and services, on a sustainable basis, for national socio-economic development. The mission of the ENR CSO is to mobilise CSOs to effectively promote good governance, effective management, and sustainable use of Uganda's natural resources (ENR-CSO, 2017). Friends of Zoka is part of the ENR-CSO Network (ENR-CSO, 2018). The CSOs have researched the governance of the forestry sector as done by the government. One of their most important findings was that Uganda has relatively good policies but that the implementation of these policies is done poorly. They blame this on the fact that there is inadequate institutional capacity in terms of financial resources, and corruption in the sector, but also lack of political support to the forestry sector (MWLE, 2016).

4.1.2 Delivery institutions

The delivery institutions are responsible for the implementation of the plans of the government, its policies, and programmes for the forestry sector. The delivery institutions are the National Forestry Authority (NFA), the Uganda Wildlife Authority (UWA), and district local governments and urban authorities (MWLE, 2016).

National Forestry Authority (NFA). The NFA is a semi-autonomous institution. The NFA is responsible for the management of the Central Forest Reserves (CFRs) in a sustainable way, and in addition offers other forestry-related products and services of high quality, which are financial and commercial practices (MWLE, 2016). The CFRs belong to the government and the NFA also must promote and develop the private forestry. Besides, the NFA is expected to work in a business-like manner (NFA, 2016).

The NFA oversees developing and managing all the CFRs to be able to provide quality goods and services for the Ugandan inhabitants (MWLE, 2016). The total number of CFRs in Uganda is 506, covering a total area of 1.265.752 ha (NFA, 2016, p.13). The NFA, together with the private sector and local communities, manage the CFRs, and collectively develop approaches for the local community regarding participation in the management of the CFRs (MWLE, 2016; NFA, 2016).

Other tasks are providing advisory, research and commercial services on contracts, and providing seeds and other planting materials for the sector (MWLE, 2016). An example of advice that the NFA gives, is recommending the Minister possible areas for new CFRs (NFA, 2016). Furthermore, the NFA is responsible for regularly carrying out a national forest inventory and other technical services. Lastly, they must prepare and implement the management plans for the CFRs and make reports about the state of these CFRs (MWLE, 2016; NFA, 2016).

The NFA works closely together with the Ministry of Water, Lands and Environment to perform its tasks. Nonetheless, the NFA has not lived up to the expectations set before. For instance, the authority is not able to finance itself and is therefore reliable on donations from the government and other donors. The management of the CFRs is not going too well, because encroachments have been taking place and a lot of money is spent on the prevention of this (MWLE, 2016). But it is hard to stop these encroachments, as they get political support. The goal of the NFA to create income by planting trees and make this the main income for themselves has so far not succeeded. Thus, they have a long way to go (MWLE, 2016).

Uganda Wildlife Authority (UWA). The UWA is responsible for the management of forest reserves like national parks, wildlife reserves and wildlife sanctuaries. The tourists visiting these parks create income, which is important for the country. Therefore, the UWA receives resources

from both the government and from donors. They work together with the NFA in the management of some CFRs, and that is why I chose to mention the UWA shortly (MWLE, 2016).

District local governments and urban authorities. The local governments and urban authorities are responsible for the management of forestry services on a decentralised level. They must establish District Forestry Services (DFSs) and are responsible for strengthening the forestry production and environmental committees in District Development Plans. Other obligations are the implementation of international and national policies on forests, the issue of permits, licences, fees and the collection of taxes, the mobilisation of funds for the development of forestry and the development and enforcement of byelaws in relation to forestry. Next to this, they support and perform quality control of the extension of forestry, mediate between farmers and service providers and provide the market with information. Lastly, they must manage local forest reserves together with communities and private investors and must do the administration of the land, and survey and approve community forests (MWLE, 2016).

4.2 Zoka Central Forest Reserve

In this research, I focus on the Zoka Central Forest Reserve as a case study. This reserve is in Adjumani, Uganda. The forest covers a total area extent of 6145 hectares (Friends of Zoka, 2019), and is since 1958 under protection of the NFA (Mbaya, 2016). In figure six the map of Uganda is shown, and there is zoomed in on the Zoka Central Forest Reserve to show where this forest is in Uganda. It is the only tropical forest in the north of Uganda and is therefore important to a lot of bird and insect species, as well as for hardwood trees that grow in the forest (Friends of Zoka, 2019). The forest is a high rain forest and therefore a rain shed for the northern part of Uganda. Within the forest rich flora and fauna can be found. Tree species that are located here are Mahogany and Mvule, plus rare species of wild coffee and flying squirrels can be found here (Mbaya, 2016). The Zoka Central Forest Reserve provides habitat for endemic species, such as the flying squirrel, that are likely to go extinct if the forest disappears (W. Amanzuru, personal communication, 11 April 2020). Currently 30-50% of the Zoka CFR depleted (Mbaya, 2016).

Earlier research (Mbaya, 2016) has found evidence for the fact that depletion is taking place in the Zoka Central Forest Reserve, caused by illegal logging. In figure four, two pictures shared by W. Amanzuru can be found to illustrate the situation. In July 2016, the parliament is informed about the depletion of Zoka Central Forest Reserve caused by lumbering and other activities like human settlement and cultivation (Mbaya, 2016). As outlined in chapter two, key drivers of deforestation in the Zoka CFR are commercial agriculture production, charcoal burning, unregulated harvesting of forest products, and weak law enforcement (Zake, Sekate & Herbert, n.d.). People involved in these illegal practices are security personnel, politicians, NFA officers, timber traders, charcoal dealers, and locals from the sub-region. The district's forest officer has been giving out lumbering licences without permission of the Minister's Public Notice of 2012. Workers of the NFA are involved in the illegal activities (Mbaya, 2016).



Figure 4 Two pictures to illustrate the situation in the Zoka Central Forest Reserve (W. Amanzuru, personal communication, 28 May 2020)

It is important that deforestation is addressed in the Zoka Central Forest Reserve because the livelihoods of communities are directly linked to the ecosystem services that the forest provides for them. Ecosystem services include for example non-timber forest products such as rainfall formation, local herbs, food through gathering, the harvesting of honey, and lastly, soil and water conservation. Additionally, the forest reserve serves as a tourist attraction which generates revenues for the government and provides employment opportunities for local communities, therefore deforestation must be addressed (W. Amanzuru, personal communication, 11 April 2020).

Researchers Zake, Sekate & Herbert (n.d.) found a few key issues that limit the sustainable management of the Zoka Central Forest Reserve. They have listed them in figure five.

-
- a) Inadequate staff capacity for that National Forestry Authority (NFA) to conduct regular and effective monitoring and surveillance of the reserve.
 - b) Unclear boundaries for the reserve and community resulting into encroachment and conflicts among the community and the duty bearers.
 - c) Encroachment on the reserve through implementation of unregulated/illegal activities (lumbering, settlement, agriculture) by adjacent community and private sector from within and outside.
 - d) Unregulated bush burning especially during the dry season. This results in the destruction of trees and forests.
 - e) Collaborative forest management was initiated by NFA, however it fully operational and has not yet yielded results due to limited resources by NFA.
 - f) No clear benefit sharing mechanisms or schemes between NFA and the forest adjacent communities as incentives for collaborative and sustainable management of the reserve.
 - g) Limited involvement of the district leadership (both technical and political) in rolling out the eviction of encroachers from the CFR.

Figure 5 Key issues limiting sustainable management of the Zoka Central Forest Reserve (Zake, Sekate & Herbert, n.d.)

These key issues could be solved if the recommendations of Diisi (2018), Mbayo (2016) and Zake et al. (n.d.) will be considered. Diisi (2018) stated that the investment in forest establishment for sustainable management should be enhanced, that environmental criminals should be severely punished, and therefore an environmental court should be handling these environmental crimes, and lastly that an armed force should be established to protect the forests from environmental criminals.

Mbayo (2016) says that the government of Uganda should intervene and evict all encroachers in Zoka to restore the ecological integrity of the Zoka Central Forest Reserve. Additionally, he wrote that environmental policemen should be stationed in the area to prevent gun- and lumbermen from coming into the forest. Besides, a comprehensive management plan should be set up in association with major stakeholders in the area, such as the Adjumani District, the NFA and the UWA to manage the forest. Next to this, the NFA, UWA, police and the Uganda's People Defence Force (UPFD) should work together and form a joint patrol squad to be able to do regular patrol along the borders of the Zoka CFR. Furthermore, re-afforestation should be taking place in the degraded areas so that the forest reserve can be fully restored, local communities can help with this and with controlling illegal activities. Lastly, local community members should also be taught about the benefits of the forest, so that they get to know how valuable it is (Mbayo, 2016).

Zake et al. (n.d.) found a few issues that should be addressed and listed possible practical strategies that could be considered in the management of the Zoka CFR:

- The institutional capacity of the NFA should be strengthened, in both human resources and funding. In this way the NFA can do its work in sustainable managing the CFRs as it should according to the forest policies (see paragraph 4.4);
- The emerging socio-economic issues should be integrated in the forest management plans, as these plans should be reviewed and updated as well;
- The NFA and local governmental stakeholders should work closer together in coordinating and managing the CFRs;
- The local communities' voice should be considered more, and they should get the chance to participate in collaborative management initiatives, as they border the CFR and depend on the forest and natural resources for livelihoods;
- Pilots for models wherein the sharing of benefit of the forests among key stakeholders at different levels are represented, should be done as they are a key factor in the sustainable management of the reserves, and;
- Appropriate livelihood options within the forest landscape should be supported and promoted. These options can be forest based enterprises, aquaculture, intensive agriculture production of high value crops and the production of livestock. This can generate income for the bordering and directly dependent communities and therefore reduce pressure on the forest resources.

Map of Uganda showing major central reserves and lakes. The map includes district boundaries, international boundaries, and major central reserves highlighted in green. Lakes shown include Lake Albert, Lake Kyoga, and Lake Victoria. An inset map shows the location of the study area within the Lake Kyoga region. A scale bar indicates 1:3,500,000, and a legend defines the symbols used.

Legend:

- International Boundary
- District Boundary
- Major Central Reserves
- Lakes

Scale 1 : 3,500,000

100 0 100 200 Kilometers

Produced by: Mapping And Inventory Centre,
National Forestry Authority, Plot 10/12 Spring Road,
P. O. Box 70863 Kampala, Tel: 031-264 035/6, 041-230365/6,
Fax: 041-230369 E-mail: info@nfa.org.ug

NFA

24

4.3 Friends of Zoka

In this paragraph I have laid out the history of Friends of Zoka, how FoZ is funded, how they perform their work and what they have achieved so far. In Appendix 6 an internal document of Friends of Zoka is attached with the permission of William Amanzuru. In this appendix more information on FoZ can be found as well.

Friend of Zoka (FoZ) is a forest community pressure group that was formed in 2016 by representatives of women and youth groups. They wanted to create a platform where people could work together on illegal harvesting of forest and trees in the sub-region of Madi. The group is concerned that in the Zoka Central Forest Reserve, as well as other forests and trees located on private lands, trees are being illegally harvested (ENR-CSO, 2018). For this reason, they decided to mobilise like-minded individuals and communities to save the Zoka Central Forest Reserve from illegal logging, charcoal and encroachment being conducted through a patronage system within the docket of both local and central governments (W. Amanzuru, personal communication, 11 April 2020). Added to this, they are worried that the district leaders are not addressing these illegalities quickly enough (ENR-CSO, 2018). The mission of FoZ is to enhance conservation and protection of forests and the environment for all humanity. FoZ strives to achieve a life-giving environment as a right to all (W. Amanzuru, personal communication, 11 April 2020). The logo of Friends of Zoka can be found in figure seven.



Figure 7 The logo of Friends of Zoka
(W. Amanzuru, personal communication,
28 May 2020)

FoZ was alarmed by the insulation of crime and resource managers working together with illegal dealers. They were worried that the situation in the region would become unsafe due to the involvement of security agencies in selling logs of original tree species like Mahogany and Afrizelia Africana. In addition, FoZ is concerned that the failure to implement directives of the Ministry for Water, Lands and Environment to ban illegal trade in these tree species and the contradiction of pronouncements by the central Ugandan government on converting the Zoka Central Forest Reserve into a sugarcane plantation will have consequences for the forest (ENR-CSO, 2018).

Friends of Zoka is funded through proposal writing and the contribution of members and well-wishers. The activities they organise are funded by the American Jewish World Service (AJWS) and the International Union for Conservation of Nature-Netherlands (IUCN) (W. Amanzuru, personal communication, 11 April 2020). The AJWS gives out grants to organisations that defend natural resources, for example by documenting land right violations in rural communities and by mobilising them to conduct advocacy and act against land sales conducted illegally or without their consent. And to organisations that build movements with linking activists to local, national and international media to raise awareness of human right violations throughout Uganda (AJWS, 2017). IUCN supports a project of FoZ that is called '*Empowering Communities in the frontline to Protect their Forest Reserves in Northern and West Nile regions in Uganda*'. The specific objectives of the project are to create a platform for the citizens to engage with governments on protection of forest reserves for sustainable livelihoods and seek for environmental justice and accountability through legal regards (Friends of Zoka, 2020).

Friends of Zoka works as a social movement concerning physical, ecological, and legal integrity of forests in the region (ENR-CSO, 2018). It is a small but rapidly growing indigenous organisation with currently six full staff members and over 200 volunteers that subscribed to the aspiration of FoZ (W. Amanzuru, personal communication, 11 April 2020). Their idea is that with the engagement of citizens, those involved can be confronted with what they are doing illegally. Because with the power of the people, the environment and natural resources can be managed. FoZ organises itself using social media, like WhatsApp, to make sure surveillance can be undertaken, and with this surveillance, illegalities in the region can be shared and addressed. For instance, they share pictures of trucks loading logs in the districts of Amuru and Adjumani as proof that it is happening. Their objective is to put pressure on governmental authorities, local governments, and as said before, the people that are involved in the depletion of trees in CFRs. Some people of FoZ are threatened by those who are involved with the illegalities. Moreover, security agencies are not happy with the work that they do and perpetrators that trade illegally are armed and try to stop FoZ. Despite these threats, the group is still growing as a CSO, and with that comes more strength in their work (ENR-CSO, 2018).

Friends of Zoka has achieved a list of things since the start in 2016. This list can be found in Appendix 7. Here I will give a short summary of the most important achievements. To illustrate the activities, FoZ has had meetings and discussions with different agencies, where they talked about issues related to deforestation and the support of these agencies to avert deforestation (W. Amanzuru, personal communication, 11 April 2020). Next to this, they exposed people that were involved in illegal deforestation activities (ENR-CSO, 2018; see Appendix 6), pushed for a ban on the logging of the *Afrizelia Africana* tree species in Uganda, expanded pressure groups, and made sure that the issues in Zoka Central Forest Reserve and the region became a national concern in Uganda (see Appendix 6).

In addition, they organised a 'walk to the Zoka Central Forest Reserve'. This was an advocacy event organised to raise awareness for the illegal harvesting and trade in forest products, like logs, timber, and charcoal, that is taking place in the West Nile region and in parts of Northern Uganda. The event was supported by civil and political leadership The Environment & Natural Resources Civil Society Organisations (ENR-CSO) supported the team during their walk (ENR-CSO, 2019). Other supporting parties included Care International in Uganda, IUCN-Uganda, the Ministry of Water, Lands and Environment, and the Walkers Association of Uganda (W. Amanzuru, personal communication, 11 April 2020). The Walkers Association and Friends of Zoka formed a team of 12 people to walk from Uganda's capital Kampala to the Zoka Central Forest Reserve in the district of Adjumani. This walk of 470 kilometres took them 15 days. With this event they were able to reach out to 4.410 people directly, via social media they reached another 130.090 people, and with mass media 5.105.000 people were reached. The whole action raised the attention of the leadership of the subregions of Madi and Acholi for the need to address restriction on illegalities in those regions (ENR-CSO, 2019).

4.4 Ugandan government policies

Since 1929, forestry policies exist in Uganda. Before 1929 there was no official forest policy in Uganda. The first national policy on forestry was formulated in the year 1929 and was instituted by the colonial government with the idea of conserving large areas of forests as forest reserves. This policy was quite successful because local chiefs would command and control the measures of

the colonial government. Since then the policies have changed and are focused on stricter conservation and more liberal economic use of the forest's resources (MWLE, 2016). There are three important policies in the forestry sector, being The Uganda Forestry Policy (MWLE, 2001), The National Forest Plan (MWLE, 2002) and The National Forestry and Tree Planting Act (MWLE, 2003). Since 2001, most of the regulations have not been updated (Turyahabwe et al., 2015). These policies will be further explained in this paragraph, but first I have explained the term 'governance' in the next section.

Governance is about the process of decision-making and the concrete decisions that are made. Forest governance concerns how decisions are made in regard to people who depend on them (MWLE, 2016). While making decisions regarding forest governance there should be looked at how these affect forests and the people who depend on these forests. Questions that have to be kept in mind in forest governance are: 'who is responsible? How do they exercise their authority and how are they accountable?'. Decision-making is done on the different levels of governance, ranging from local to global. When there is a lack of forest law compliance and/or good governance this can cause significant environmental, social, and economic consequences, and even lead to political instability, an increased income disparity and the loss of biodiversity and habitats (MWLE, 2016). Good governance is about the quality of the governance by those institutions which act in the public interest (Addink, 2019).

4.4.1 The Uganda Forest Policy (2001)

The Uganda Forest Policy is developed in consultation with a range of different stakeholders involved in the forestry sector. The policy provides information on the sustainable development of the forestry sector. This policy is based on other national policies and legal frameworks that were written before. Thus, it has incorporated principles and standards on sustainable forest management that have been internationally adopted for years. The core themes of this policy are conservation and sustainable development, livelihood enhancement, and institutional reforms with new roles for both the local government as the private sector, as well as for local communities and NGOs. The Guiding Principles of the Uganda Forest Policy of 2001 can be found in figure eight (MWLE, 2016).

In the Uganda Forest Policy, the roles of different parties involved are explained. These parties include the local government, the commercial private sector, the local forest communities, and lastly, Non-governmental Organisations (NGOs) and Community-Based Organisations (CBOs). In relation to this research the role of NGOs and CBOs will be further explained, as Friends of Zoka is a CBO. NGOs and CBOs can play an important role in mobilising and stimulating local people. Therefore, they strengthen civil society and support the active participation of these local people in managing the forests and trees. NGOs and CBOs are key organisations in the implementation of the development of forests. They can build capacity and provide contact between the government and civil society. Moreover, they keep the interests of the poorer people of society in mind. One other important role is advocating and supporting policy changes with sustainable forestry development in mind (MWLE, 2001).

Uganda Forest Policy (2001) Guiding Principles:

- Consistency with the **Constitution and Vision 2025** in guiding sustainable development;
- Commitment to **conservation and sustainable development**, meeting the needs of this generation without compromising the rights of future generations;
- **Improvement of livelihoods** as a major goal in all strategies and actions for the development of the forestry sector so as to contribute to poverty eradication;
- Safeguarding the nation's **biodiversity and environmental services**;
- Development of **partnerships in governance**, to enhance efficiency, transparency, accountability and professionalism, and build confidence in all forest stakeholders:
 - Reforming the **role of central government** to withdraw from activities that can be carried out more effectively by the private sector or other stakeholders, but to maintain core functions of policy development and regulation
 - Enhancing the **role of local government** with more devolved responsibility for resource management wherever practical and advisable
 - Developing the **role of the private sector** as investors and managers
 - Encouraging more active **participation of local communities and farmers** in the management of the country's forests;
- Enhancing the role of **NGOs/CBOs** to strengthen civil society, build capacity and grassroots participation, and help develop the rights and responsibilities of forest users;
- Enabling the **active participation and affirmative action** of all women and men, young people and the elderly, and vulnerable or disadvantaged groups in forestry sector development;
- Respecting the attributes of **cultural and traditional institutions** in forestry sector development given the respect they are accorded by their subjects in respect to the administration of customary tenure as in Northern Uganda;
- Supporting the implementation of current and future **international commitments** that affect the forestry sector; and
- Ensuring that **environmental and social values** are used in assessing strategies to implement the Forestry Policy.

Figure 8 Uganda Forestry Policy (2001) Guiding Principles

There are 11 forest policy statements developed in this policy. Policy statement 1: 'on forestry and government land' will be further explained in relation to this research as it is related to the role of the government. It states that the government will protect, maintain, and manage the present forests in a sustainable way. Forest products should be available, but the production of this will be done with the conservation of biodiversity in mind, as well as the protection of watersheds, riverbanks, and lakeshores. Partnerships between state and civil society will be used to manage the forests (MWLE, 2001).

4.4.2 The National Forest Plan (2002)

The National Forest Plan was developed for the forestry sector in Uganda. Different parties were involved in developing the National Forest Plan including the central and local governments, the private sector and civil society. It was guided by a steering group and six working groups, the participants of these groups came from a diverse range of interest groups and specialists that are related to forests and nature conservation in one way or another (MWLE, 2002).

The plan is made to be able to set the Uganda Forestry Policy of 2001 into action, with the guiding principles described in figure eight. It is a strategic document that outlines the long-term vision of the forestry sector. This vision is described as '*a sufficient forested, ecologically stable and economically prosperous Uganda*' (MWLE, 2002). The ambitions of the National Forest Plan are to

raise the incomes and quality of life, increase economic productivity and employment, and to achieve sustainable forest resource management. The goal is stated as *'an integrated forest sector that achieves sustainable increases in economic, social and environmental benefits from forests and trees by all the people of Uganda, especially the poor and vulnerable'* (MWLE, 2002, p.29).

Governance on forest land is described more broadly in the National Forest Plan than it is described in the first statement of The Uganda Forestry Policy. To be able to do this, a situation analysis is done which states that there is loss of forest cover, deforestation of forest resources and that underlying institutional factors might have to do with this. The institutional roles, responsibility and relationships are described as well. Important parties involved in this case are the Ministry of Water, Lands and Environment, together with other central institutions, as well as local governments, the NFA, NGOs, the private sector and civil society (MWLE, 2002).

In the National Forest Plan some suggestions are made for the forestry sector in Uganda. The Ministry of Water, Lands and Environment should recruit more staff and build capacity to be able to oversee the forest sector. Next to this, forestry policies, standards and legislation should be formulated and overseen by the Ministry. In addition, the Ministry should provide technical support and monitor the forestry in local governments, monitor the NFA, provide advice, public information, and advocacy to the sector's stakeholders. Lastly, it is important that the National Forest Plan is effectively coordinated and that funds are mobilized together with other resources for the forest sector. The NFA also got appointed a strategy to be properly developed. Therefore, the products and services of the NFA should be developed and there should be ensured that the NFA will become a self-financing organisation (MWLE, 2002).

4.4.3 The National Forestry and Tree Planting Act (2003)

The National Forestry and Tree Planting Act is an act to provide for the conservation, sustainable management, and development of forests for the benefit of the people of Uganda. The purposes of this act are described in figure nine.

A Central Forest Reserve (CFR) will be declared a CFR if it is a site with specific scientific interest with the purpose of the protection of nature, the enhancement of biological genetic resources, the maintaining of animal and plant species, and the preservation of rare, endangered or vulnerable species. Furthermore, it is important to protect waters, soils, and ecosystems in that area. Lastly, when there is a joint management in the forest reserve and/or it is a recreational forest for the purposes of eco-tourism, a forest can be declared as a CFR.

It is not allowed for anyone to cut, disturb, damage, burn or destroy any of what the forest produces, or to remove or receive any forest products, except when this is in accordance with regulations and guidelines and/or in the course of management of the forest by the responsible body. However, the responsible body may grant a licence for the not allowed things stated before, as long it is subject to the management plan. The export of timber is only allowed with a licence and therefore cannot be done without and export licence (MWLE, 2003).

The purposes of this Act are—

- (a) to create an integrated forest sector that will facilitate the achievement of sustainable increases in economic, social and environmental benefits from forests and trees by all the people of Uganda;
- (b) to guide and cause the people of Uganda to plant trees;
- (c) to ensure that forests and trees are conserved and managed in a manner that meets the needs of the present generation without compromising the rights of future generations by safeguarding forest biological diversity and the environmental benefits that accrue from forests and trees;
- (d) to promote the improvement of livelihoods through strategies and actions that contribute to poverty eradication;
- (e) to encourage public participation in the management and conservation of forests and trees;
- (f) to facilitate greater public awareness of the cultural, economic and social benefits of conserving and increasing sustainable forest cover;
- (g) to promote the decentralisation and devolution of functions, powers and services within the forest sector; and
- (h) to ensure that environmental benefits, costs and values are reflected in strategies and activities relating to forestry.

Figure 9. The purposes of the National Forestry and Tree Planting Act (2003)

The establishment of the National Forestry Authority (NFA) is recalled in the National Forestry and Tree Planting Act (MWLE, 2003). The NFA is described as a body corporate with an official seal and it may acquire, hold and dispose of moveable and immovable property, sue and be sued, and do all the acts and things that as a body corporate may lawfully do so.

4.5 Summary of the case on the Zoka Central Forest Reserve

The research area for this case study is the Zoka Central Forest Reserve, which is in Adjumani, Uganda. The forest covers a total of 6145 hectares (FriendsofZoka, 2019) and is under the protection of the NFA (Mbayo, 2016). Key institutions in the forestry sector of Uganda can be distinguished into two groups: enabling and delivery institutions. The enabling institutions include the Ministry of Water, Lands and Environment and the CSOs. Followed by the delivery institutions that include the NFA, UWA and district local governments and urban authorities (MWLE, 2016).

The government of Uganda has three main policies on forest management. These include the Uganda Forestry Policy, the National Forest Plan, and the National Forestry Tree Planting Act (MWLE, 2001; 2002; 2003). Above all, the most important of the Uganda Forestry Policy is policy statement 1. That states that the government will protect, maintain, and manage the present forests in a sustainable way (MWLE, 2001). Additionally, the National Forest Plan is a strategic document that outlines the long-term vision of the forestry sector in Uganda and gives advice on how to manage forestry policies and stakeholders in the forestry sector (MWLE, 2002). And

finally, the National Forestry and Tree Planting Act is an act to provide for the conservation, sustainable management, and development of forests for the benefit of the people of Uganda (MWLE, 2003).

In brief, depletion is taking place in the forest. This is being caused by illegal logging, human settlement, and cultivation, among other causes (see paragraph 2.2 and 2.3). People that are involved in these practices are security personnel, politicians, NFA officers, timber traders, charcoal dealers, and locals from the sub-region (Mbayo, 2016). Diisi (2018), Mbayo (2016) and Zake et al. (n.d.) mentioned recommendations that could be considered to be able to solve the key issues in the forest (see paragraph 4.2).

Friends of Zoka is a civil society organisation with a mission to enhance conservation and protection of the forests and the environment for all humanity. They work together to save the Zoka Central Forest Reserve from illegal logging, charcoal, and encroachment (W. Amanzuru, personal communication, 11 April 2020) (see 4.3 and appendix 6).

5 Analysis of research material

This chapter presents the analysis of the research results based on the sub-questions in chapter one. In this research, I have conducted six semi-structured interviews and analysed what was being said in these interviews with ATLAS.ti as is described in chapter three. Together with the theory that is laid out in chapter two, I was able to answer the sub-questions. The answer of each sub-question can be found in a separate paragraph in this chapter.

5.1 General and national causes of deforestation and in the Zoka Central Forest Reserve

The first sub-question was: *‘what are the causes of deforestation in general, in Uganda and in the Zoka Central Forest Reserve specifically?’*. To answer this question, I have looked at the literature on causes of deforestation that are described in chapter two, the case study information as described in chapter four, as well as the answers that the interviewees gave on the theme of deforestation in the interviews.

In paragraph 2.2. and 2.3., I described direct and indirect causes of deforestation. These causes are used in the analysis. Figure ten shows the number of times that the different causes were mentioned during the interviews is shown. Two main causes that were mentioned most often during the interviews, are ‘logging and fuel wood’ as a direct cause of deforestation, and ‘corruption and political cause’ as an indirect cause of deforestation.

According to Tacconi (2012) illegal logging is a global problem. The Ugandan Ministry of Water, Lands and Environment (2016) wrote that the woodlands in Adjumani have been put under pressure for firewood. Added to this, most of the logging in Uganda is done illegally and is one of the main causes of deforestation in Uganda (Turyhabwe et al., 2015). This confirms what is mentioned during the interviews.

In the governance of the Ugandan forestry sector, a few issues are related to illegal and unregulated trade of forest products (MWLE, 2016). In addition to this, there is poor regulation because of weak institutions (MWLE, 2001). And illegal activities are taking place in relation to corruption (Chakravarty et al., 2012). These findings in the literature show that ‘corruption and political cause’ can be seen as indirect cause of deforestation in general, in Uganda and in Zoka CFR.

Show codes in group direct causes of deforestation				Show codes in group indirect causes of deforestation			
	Name		Grounded		Name		Grounded
●	◇ logging and fuel wood		19	●	◇ corruption and political cause		25
●	◇ forest land and other plantations		6	●	◇ overpopulation and poverty		10
●	◇ urbanisation/industrialisation/infrastructure		5	●	◇ undervaluing of the forest		6
●	◇ expansion of farming land		4	●	◇ land rights, land tenure and inequitable land...		5
●	◇ fires		2	●	◇ economic causes		4
●	◇ encroachment		1	●	◇ transmigration and colonisation schemes		3
●	◇ tourism		0	●	◇ common property resource management		1
●	◇ overgrazing		0	●	◇ exploitation by industrialised countries		1
●	◇ air pollution		0	●	◇ colonialism		0
●	◇ mining		0	●	◇ the debt burden		0

Figure 10 Code group of ‘direct causes of deforestation’ (left) and code group of ‘indirect causes of deforestation’ (right).

As explained in paragraph 2.1., the tragedy of the commons by Hardin (1968) has been related to deforestation before. For a tragedy of the commons to occur, individuals have to act independently and rationally for their own self-interest which leads to depletion of common resources (Otum et al., 2017), in this case the forests and the Zoka Central Forest Reserve in particular. 'Logging and fuel wood' and 'corruption and political cause' as two main causes of deforestation can be seen as situations where individuals act independently and rationally for their own self-interest and therefore might cause a tragedy of the commons.

5.1.1 General and national causes of deforestation

During the interviews it was mentioned that deforestation in general seems to be mainly caused because of economic reasons and overpopulation and poverty, which are both indirect causes of deforestation according to Chakravarty et al. (2012).

Esteban Rossi mentioned that he thinks that deforestation is a social economic process. The situation differs from country to country *'depending on the politics and the geography, but the ultimate drivers of deforestation for the most part are social economic'* (E. Rossi, personal communication, 14 April 2020). Geist & Lambin (2002) affirm this by saying that economic factors are stated as important underlying factors in the case of deforestation. Chakravarty et al. (2012) add that economic development causes more deforestation because of trying to maximise profits in the agricultural sector to meet food requirements, next to the consumption habits of developed countries. Other reasons that were mentioned by Rossi, Ssemmanda and Lain for deforestation in general are fires, the expansion of farming land, corruption and political causes, and urbanisation and/or industrialisation and/or infrastructure.

During the interviews with the three members of FoZ and Ssemmanda, the specific causes of deforestation in Uganda were discussed, as Rossi and Lain are not familiar with the specific situation in Uganda. The cause that was mentioned most frequently in relation to deforestation at country level is 'corruption and political cause', an indirect cause. As mentioned in chapter two, the forestry sector has a few issues that are associated with illegal and unregulated trade of forest products (MWLE, 2016), such as illegal logging and the production of charcoal. This citation shows that illegalities are taking place:

'and as Friends of Zoka, when we follow these issues [illegal logging and charcoal production] we realised that some of the people that were doing the illegalities were government officials, people who have connections to high government agencies, so even they have security officials that aid them, that help them to get the destruction.' - James Anzo, personal communication, 2 May 2020.

As discussed in chapter two, illegal logging and timber trade are the main causes of deforestation in Uganda (Turyahabwe et al., 2015). This can be seen as another important direct cause of deforestation. Richard Ssemmanda mentioned during the interview that a lot of fuel wood and charcoal comes from the forest and that this can lead to overuse. He made this clear by saying *'I bet it leads to almost complete clearance of these forests'* (R. Ssemmanda, personal communication, 15 April 2020).

In this thesis, I have used Chakravarty et al. (2012) to understand the direct and indirect causes of deforestation. During the interviews with Ssemmanda and the three members of Friends of Zoka, I asked about what the interviewees saw as causes of deforestation in Uganda to see if and how this related to the findings that Chakravarty et al. (2012) present as described in chapter two.

Next to 'logging and fuel wood', other direct causes of deforestation that were mentioned, on the national level of Uganda, during the interviews are: 'expansion of farming land', 'forest land and other plantations' and 'urbanisation and/or industrialisation and/or infrastructure'. In the interviews, the expansion of farming land is not mentioned as a great cause of deforestation, unlike what the MLWE (2016) states. According to the MLWE (2016), one of the main causes of deforestation in Uganda is the conversion of forest land into other land types such as agriculture. Geist & Lambin (2002) add here that the expansion of agricultural land can be linked to many deforestation causes. Forest land is cut to make space for other plantations sometimes. This means that trees are replanted on these plantations, but this puts pressure on the land and replaces the natural forests that used to be there. The transformation of forest can also be caused by urbanisation and industrial growth, as this puts pressure on forest lands (Chakravarty et al., 2012). These causes are not seen as main causes of deforestation in Uganda by Ssemmanda and the FoZ members. In addition to this, other direct causes as stated by Chakravarty et al. (2012) such as 'overgrazing', 'fires', 'mining', 'air pollution', 'encroachment' and 'tourism' were not mentioned on the national level of deforestation and its causes in Uganda during the interviews. On the other hand, encroachment did happen during the 1970s and 1980s in the forest in Uganda, as people were settling in the forests and this led to deforestation (MLWE, 2001) and this was not mentioned during the interviews.

Aside from 'corruption and political cause', 'overpopulation and poverty', 'transmigration and colonial schemes' and 'undervaluing of the forest' were mentioned as indirect causes of deforestation. Firstly, a larger population requires more food and more land to produce this food on (Chakravarty et al., 2012). This is also happening in Uganda, where population growth results in an increase in the demand for agricultural land and firewood energy (MWLE, 2001). Secondly, transmigration means that migrants from other countries come to, in this case, Uganda. As a result of this the population might grow as well (MWLE, 2001). Thirdly, undervaluing of the forest mentioned by the MWLE (2016) is happening. Not mentioned, yet described by Chakravarty et al. (2012), were 'colonialism', 'exploitation by industrialised countries', 'the debt burden', 'land rights, land tenure and inequitable land distribution resources' and 'economic causes'. In Uganda, the access rights of lands and the responsibility on the resource management as the policies are not being supported (MWLE, 2001). Even though this did not come up during the interviews, it is occurring in Uganda. Although the latter cause was recalled in general causes of deforestation, it does not seem to play a great role in deforestation at the national level in Uganda. The other three causes are neither mentioned in the literature nor in the interviews as an indirect cause of deforestation at the national level in Uganda.

Overall, economic reasons and overpopulation and poverty can be appointed as causes of deforestation in general. Next to this, at the national level of Uganda the following causes can be seen as main causes of deforestation: 'corruption and political cause' and 'logging and fuel wood'. A few other causes have been mentioned, but not that often to appoint it as main causes.

5.1.2 Causes in Zoka Central Forest Reserve

The following causes, in descending order of occurrence, of deforestation can be determined for the case of the Zoka Central Forest Reserve based on the interviews, are the following: 'logging and fuel wood', 'corruption and political cause', 'overpopulation and poverty', 'land rights, land tenure and inequitable land distribution resources', 'undervaluing the forest', 'exploitation by

industrialised countries', 'forest land and other plantations', and lastly 'transmigration and colonisation schemes'.

Another cause that was not mentioned in the literature of Chakravarty et al. (2012) is the 'commercialisation of forest products', but this was mentioned by all three members of FoZ. It was mentioned the most together with 'logging and fuel wood' and 'corruption and political cause'. With 'commercialisation of forest products' I mean that the forest products are being used for commercial purposes and extraction is taking place on a commercial scale instead of for domestic use. The commercialisation can be linked to the tragedy of the commons by Hardin (1968) as the individuals, most likely the ones involved in logging and burning charcoal, are making profits for their own good and with that taking forest products away from community members that use it for domestic use. I have added this as a possible cause of deforestation as it was mentioned frequently during the interviews but was not stated in literature as a cause itself.

Two members of the team of Friends of Zoka state the following on 'commercialisation of the forest':

'But then these current destruction that is happening in the forest is on a commercial scale, sometimes you find a lorry is loaded with over 500 bags of charcoal and this is happening not just once a month, but every day, almost every day. So, the scale is big because everyone is, there is more interest in it.' – James Anzo, personal communication, 2 May 2020.

'Because the real thing that does it is the destruction is the commercialisation: one person coming and taking 400 bags is what really causes the destruction.' – Anonymous employee of Friends of Zoka, personal communication, 11 April 2020.

These quotes show that deforestation is caused because people began seeing the trees as a possible source of income by selling it at a commercial level instead of just for personal use. This could be added as an indirect cause of deforestation. In my opinion, it is closely linked to 'overpopulation and poverty' as stated by William Amanzuru: *'Then also there are issues of poverty, whether community members live inside these forest reserve and have the trees harvested and they end up burning it for charcoal and selling this charcoal for commercial purposes.'* (W. Amanzuru, personal communication, 12 April 2020).

That the deforestation in this case study is being caused by 'logging and fuel wood' is affirmed by Turyahabwe et al. (2015). They state that most of the logging in Uganda is done illegally, and that this is done both Central Forest Reserves as well as private lands (Turyahabwe et al., 2015). During different interviews I conducted with experts this is being endorsed. James Anzo from FoZ said that deforestation has been going on in Uganda and Adjumani for a longer time and it is not a new thing. He adds that *'it is in different forms here in Adjumani because the people understand it in the forms of the destruction of the environment, in the forms of commercial charcoal banning, illegal lumbering and logging.'* (J. Anzo, personal communication, 2 May 2020).

Illegal charcoal burning and rampant felling of trees for firewood is taking place in Central Forest Reserves in Uganda, according to the Ministry of Water, Lands and Environment (2016). In this case, the charcoal business is a new trade in the region, according to the anonymous employee of FoZ. He said that logging forms an important part of the deforestation and that *'the, logging usually is facilitated by local businessman here. Then they are not owners of the logs. The owners*

of the logs are man mainly in Kampala, they are usually in government.’ (Anonymous employee of Friends of Zoka, 11 April 2020). The Zoka Central Forest Reserve is *‘the only natural tropical rainforest in that part of the country, but we also know it for a particular a species of tree [Afrizelia Africana].’* Most of the people doing the logging are especially interested in this tree species, which causes most of the problems, as it grows well in that area of the Zoka CFR. According to Richard Ssemmanda *‘there has been a lot about Zoka in the news, with high profile people are doing a lot of illegal felling of trees.’* (R. Ssemmanda, personal communication, 15 April 2020).

Chakravarty et al. (2012) state that corruption and political causes are illegal activities that are taking place concerning the harvesting of protected trees and the smuggling of forest products that can be done because contracts are approved and harvesting permits are given out. The following quote enforces that this situation is also taking place in Zoka CFR:

‘To me it [monitoring of forest products] is not being enforced because there are these officers who are charged with these responsibilities end up taking bribes. (...) Now virtually in my country bribing has become a very important key to any success you need to achieve. So, where you realise government itself also is involved in this kind of system, that really puts them upper hand of taking a lead in this deforestation.’ – William Amanzuru, personal communication, 12 April 2020.

In addition to the quote above, James Anzo said that FoZ arrested a truck that was loaded with over 380 bags of charcoal and reported this to the resident district officer *‘and most unfortunately by the evening the owner of the vehicle had to pay two million to the office of the resident district commissioner and the vehicle was set free.’* (J. Anzo, personal communication, 2 May 2020). The local government even tries to sell the forest products to arrange local revenues, but *‘these also affect the issue of deforestation inside Zoka Central Forest Reserve’* (W. Amanzuru, personal communication, 12 April 2020). This shows that deforestation is taking place because of corruption.

Next to the corruption that is taking place in relation to deforestation in the Zoka CFR, political causes similarly play a part. Some forests are being degazetted, which means that the official status of the forest is being removed. In this way the local people get the chance to expand the area for agriculture and food production. Thus, by degazetting political underplay is happening and because of this, deforestation is taking place (R. Ssemmanda, 15 April 2020). Or to say it differently: *‘the people especially, politicians, have resulted to destroying forest just for the sake of getting money, with impunity.’* (J. Anzo, personal communication, 2 May 2020).

To summarise, causes of deforestation in the Zoka Central Forest Reserve are identified in this thesis as: ‘logging and fuel wood’, ‘corruption and political cause’ and ‘commercialisation of forest products’. With ‘logging and fuel wood’ as a direct cause and ‘corruption and political cause’ and the ‘commercialisation of forest products’ as indirect causes of deforestation.

5.2 The role of the Ugandan national and local government in deforestation

The second sub-question was: *‘what is the role of the Ugandan national and local government in deforestation?’*. This question is answered by using policy documents of the Ugandan government as summarised in chapter four, where I discussed three policies that are currently operative in Uganda on the topic of forest management. These policies are the Uganda Forestry Policy (MWLE, 2001), the National Forest Plan (MWLE, 2002), and the National Forestry and Tree Planting Act

(MWLE, 2003). In addition, literature is used that reflected on these policies together with the answers of the interviewees to the questions on the role government in deforestation.

During the interviews, the national government is most frequently mentioned, which became clear after the coding process. The national government consists of enabling and delivery institutions. An enabling institution is the Ministry of Water, Lands and Environment that wrote the policies whereas, the delivery institutions are the NFA and UWA. In addition to the national government and its institutions, the role of the district local governments and urban authorities on the local scale was brought up during the interviews. At the national level, the national government in general was mentioned more often than the MWLE and the NFA was mentioned more often than the UWA. It seems that as they were mentioned more frequently, their role in deforestation is bigger. In this paragraph I will describe the role of these different institutions on the national and local government level.

5.2.1 National government and Ministry of Water, Lands and Environment

The Ministry of Water, Lands and Environment is responsible for the formulation and oversight of policies, stands and legislation for the forestry sector (MWLE, 2016). James Anzo said that this is the ministry that is concerned with the issues on the environment in the country (J. Anzo, personal communication, 2 May 2020).

During the interviews, there was talked about the role of the national government in relation to deforestation. Esteban Rossi was critical by saying that *'there is a big debate about whether or not governments can implement a set of policies to reduce deforestation, whether or not it can work'* Added to this, he said that policies can change directions and that it can take decades to solve the deforestation problem (E. Rossi, personal communication, 14 April 2020).

The anonymous employee of FoZ said that *'the government cannot claim to be playing its role. (...) the role they are supposed to do on paper is heaven on earth, but in reality, operations they are not there'* (Anonymous, personal communication, 11 April 2020). Similarly, Ouba et al. (2010) state that there have been weaknesses in the forest governance of Uganda. This mostly has to do with the implementation of existing policies and laws. For example, the CFRs become targets during times of elections when forest crime occurs more often. In addition, issues of corruption and having not enough capacity to manage the CFRs appear on the institutional level (Ouba et al., 2010). In the same way, James Anzo mentioned that *'there is no political will to stop it [deforestation]'* and that some of the people involved in the illegalities were government officials. He continued by saying that no action is being taken by the central government and that the institutions that have been created to fight deforestation are not working (J. Anzo, personal communication, 2 May 2020). William Amanzuru adds that the president sometimes talks about the issues in the Zoka Central Forest Reserve, but that the words he speaks are not being enforced (W. Amanzuru, personal communication, 12 April 2020).

'I mean by law they [the government] are not supposed to give this license, they are not supposed to license to people to go into the forest. But the contrary happens, people go into the forest, they do destruction and they walk out without actions being taken. So, if the government implements if the government fulfils their objectives. We believe these illegalities will stop.' James Anzo shows that the government is giving out licenses while that is not supposed to happen. In addition, he said that the government has the power to stop the illegalities if it is willing to do something

about it (personal communication, 2 May 2020), and thereby agrees with William Amanzuru. The ENR-CSO Network stated in the 'State of Uganda's Forestry 2016' document of the MWLE (2016) that they believe weakness in the enforcement is caused by deficient institutional capacity in resources, both human and financial, and because of corruption and lack of political support in the sector (MWLE, 2016).

When following the statements from the interviews, it seems that the national government is involved in the deforestation in the Zoka Central Forest Reserve. The anonymous employee said that local people are also involved in the logging business but that they are only playing a facilitating role as middleman carrying the money on behalf of the people in the government. This becomes clear from the following statement: *'but (...) they appeared (...) to be the owners of the business. Behind these men are invisible hands that we do not see in most cases. (...) These invisible hands are people in the government, (...) or well connected to the government.'* (Anonymous, personal communication, 11 April 2020). William Amanzuru also said that there are arms of the government inside of the Zoka Central Forest Reserve and *'they can't be arrested, they can't be charged, they can't be questioned'* because the government plays a role (personal communication, 11 April 2020).

My findings suggest that the national government and Ministry of Water, Lands and Environment have important roles in preventing deforestation from happening. But both are not living up to these expectations by seeming to be involved in the deforestation.

5.2.2 National Forestry Authority (NFA) and Ugandan Wildlife Authority (UWA)

The NFA works together with the UWA in the management of some Central Forest Reserves (MWLE, 2016). The forests that fall under the Uganda Wildlife Authority have rangers that hold guns and there is less to almost no deforestation happening there. It would be an idea to bring the NFA closer to UWA, so that the resources can be shared and together they would have a stronger position against threats (T. Lain, personal communication, 1 May 2020). Other than this, not much was said about the role of the UWA during the interviews.

The idea of Lain might be a good idea as it is the NFA's responsibility to manage the CFRs in a sustainable way, but it has not proved to live up to these expectations. An example of this is that the NFA is not able to finance itself and still relies on funding from the government and donors as encroachments have been taking place and a lot of money is spent in preventing this (MWLE, 2016). According to one of Ostrom's (1990) design principles in managing common-pool resources, it is important to have clearly defined boundaries to be able to manage a CPR properly. This means that both the people who have access to the CPR, in this case the Zoka CFR, that must be made clear as well as the actual boundaries of the forest itself (Ostrom, 1990). This could maybe stop encroachment from happening and then the NFA would not have to invest in preventing encroachment.

The anonymous employee of FoZ confirmed that the NFA does not have enough resources by saying: *'one thing I know about for example NFA, this is one of the struggling entities, authorities of the government. It struggles in sense of that it gets less government budgetary allocations.'* (Anonymous, personal communication, 11 April 2020). Meanwhile, the NFA is expected to work in a business-like manner and finance itself (NFA, 2016) as is explained in paragraph 4.1.2.

Both Richard Ssemmanda and William Amanzuru said something similar about the performance of the NFA during the interviews. According to Richard Ssemmanda *‘the talk was much from the NFA but less action on the ground, probably due to the limited resources but also maybe due to the fact that Zoka is a bit far off’* and that a general problem of the NFA is that they are understaffed, especially at the field level (R. Ssemmanda, personal communication, 15 April 2020). William Amanzuru added to this that officials of the NFA came to them and said: *‘we are underfunded, and we are under skilled’* and that *‘our mandate power is not enough.’* (W. Amanzuru, personal communication, 12 April 2020).

Thus, the NFA is responsible for the management of Uganda’s CFRs and therefore plays a role in deforestation. It seems that this is mainly caused by a lack of resources and that for this reason the NFA cannot perform the work as it is expected to.

5.2.3 Local government

The district local governments and urban authorities are gathered under the local government level. These are responsible for the management of forestry services on a decentralised level. The district forest office is directly concerned with protecting the forest cover in the district by implementing the forestry policies, issuing permits among other things, and mobilising funds for development and enforcement of the forests (MWLE, 2016). But according to James Anzo these *‘institutions are not doing what they are supposed to do, what they are mandated by the laws to do’* (personal communication, 2 May 2020).

This is being reassured by the Ministry of Water, Lands and Environment with saying that the local governments have not lived up to the expected levels of their tasks, due to not enough staff and inadequate resources (MWLE, 2016). In addition to this, the institutional structure to regulate environmental and forest management at the local level is weak because of inadequate funding for operation and development (Obua et al., 2010).

According to the anonymous employee of FoZ, the district forest office collects revenues from charcoal because there is a lack of funding for them. Thus, they have now decided themselves to only collect the revenues instead of planting trees. But the anonymous employee of FoZ made clear that they should be the ones telling *‘please plant trees, plant trees’* but they are promoting *‘let’s cut more, let’s cut more’*. The district forest office is supposed to tell *‘for every tree you cut, you plant two trees’*, but it is not doing that, as long as the revenues are being paid (Anonymous, personal communication, 11 April 2020). Next to this, these officers are supposed to protect the environment even though they have set vehicles free that Friends of Zoka had impounded and taken to the office (J. Anzo, personal communication, 2 May 2020).

Overall, it seems that the local government is not performing their tasks as they should be. In addition to this, corruption seems to be taking place at the local level.

5.3 The role of Friends of Zoka, as a civil society organisation, in deforestation

In this paragraph the answer to the sub-question *‘What is the role of Friends of Zoka (as a CSO) in deforestation?’* will be given. This question is answered using the documents that are available on the work of Friends of Zoka and the answers of the interviewees on the topic of the role of Friends of Zoka. As explained in paragraph 4.3., Friends of Zoka is a forest community pressure group (ENR-CSO, 2018) with a mission to enhance the conservation and protection of forests and the environment (W. Amanzuru, personal communication, 11 April 2020).

James Anzo said that *'the reason why Friends of Zoka was established as a way to save Zoka Central Forest Reserve from being depleted, but unfortunately as we talk more than halve of the forest is gone... so basically Friends of Zoka wants to save from being destroyed'* as addition to the mission of FoZ as mentioned by William Amanzuru above.

William Amanzuru, the team leader of Friends of Zoka said that their role as Friends of Zoka is to create awareness on the relevancy of the forest, to expose people who do illegalities in the Zoka Central Forest Reserve with naming and shaming, and to mitigate between the abusers and the reserves as a bridging agent. The latter is to make sure the people who are supposed to get the benefits are getting these (W. Amanzuru, personal communication, 12 April 2020). In addition to this, they exposed people that were involved in illegal deforestation activities (ENR-CSO, 2018; Zoka, n.d). FoZ has radio announcements running to raise this awareness and is putting pressure on the government to stop the illegalities. Next to this, lobbying is done to gain financial support to be able to reach the forest, as it is kilometres away from the district, and FoZ does not have the means of mobility to go there at all times (J. Anzo, personal communication, 2 May 2020). Richard Ssemmanda confirms this role of FoZ by saying that there has been a lot of advocacy towards sustaining the Zoka Central Forest Reserve, which is the only high tropical forest in Uganda. *'The lobbying and advocating and trying to get politicians to book (...) but also getting citizens in that area to rise up against all these inequities that were being occasioned on the central forest reserve'* (personal communication, 15 April 2020).

Friends of Zoka is also connecting with the community. Community members call FoZ when they notice that destruction is going on in the forest. According to James Anzo this proves that the community is aware that the destruction must stop and that they play a major role in the prevention. *'We believe by creating such an impact, we are having a positive role in protecting and conserving the environment'*. But on the other hand, he said that FoZ has a slightly negative impact as the workforce is small and they are left powerless in some situations and they do feel bad about this (J. Anzo, personal communication, 2 May 2020). Despite this, there has been a lot of change in the support of the community and Friends of Zoka with the lobbying and advocacy (R. Ssemmanda, personal communication, 15 April 2020).

Tina Lain brought up that it is interesting to see how FoZ mobilises themselves and the people around the Zoka Central Forest Reserve by getting a lot of people engaged without having a formal structure. *'That is one of the powers of mobilisations that you can have, and I think it is very interesting to have this kind of organisations that are strong enough to bring information to communities and raise awareness among communities, and bring communities into action'*. Friends of Zoka has been working hard to try changing things by getting people involved and support them in the work they do. Lain adds that FoZ has increased the public visibility on the ground with marches, which makes it more difficult for the government and other officials to continue the work of the destruction in the forest (T. Lain, personal communication, 1 May 2020).

Lastly, the following quote of William Amanzuru (personal communication, 12 April 2020) describes the role that FoZ plays with the work that they do: *'At Friends of Zoka we do a lot on environmental protection, advocacy and also giving out a lot of advocating information on the environment. We mostly do advocacy in terms of exposing those who do wrong to the environment. (...) See how we can lobby for change in the community of doings, for change in the*

community perceptions. That our interest majorly is that these changes may lead to some changes of the policy issues and other things. (...) So virtually that is what we do.'

The work that Friends of Zoka does is not without risks. Friends of Zoka has been very vocal and therefore more vulnerable to threats and risks on the ground (T. Lain, personal communication, 1 May 2020). All three members of FoZ confirmed that these risks also applied for them (Anonymous, personal communication, 11 April 2020; W. Amanzuru, personal communication, 12 April 2020; J. Anzo, personal communication, 2 May 2020). *'In some extreme situations members of Friends of Zoka get threats, they get abuses, they get smear campaigns and all that.'* (W. Amanzuru, personal communication, 12 April 2020). Sometimes these treats are even physically but *'we don't keep quiet about it, we tell people, we share evidence on social media'* (Anonymous, personal communication, 11 April 2020). Environmental activists are often threatened and sometimes even killed for the work that they do. Even though Global Witness states that threats, unlike deaths, do not always make headlines (Global Witness, 2018), the threats that FoZ has faced did come up in the local news a few times. Examples of this are death threats, break-ins and the fact that William had to send his family to another part of the country to make sure that they are safe after he was tipped that there was a plan to kidnap his children (Souwieon.com, 2019). In another interview with Business & Human Rights Resource Centre in October 2019 he adds that he has been offered bribes many times to stop the work he is doing and that FoZ is labelled as 'anti-government' or 'anti-development' because of their work in protecting the forest (Dobsen, 2020). Furthermore, another source adds that William has been receiving threats since the start of an investigation that led to the exposing of illegal activities of criminal cartels that profit from the timber business in Zoka CFR (Uhuru, 2019). In the year 2019, William Amanzuru received the EU Human Rights Defenders Award and in an interview with the Embassy of Sweden in Kampala, he said similar things about threats such as death threats, surveillance and the fact that he had to move his family away (Lindgren, n.d.). Despite these threats, the group is still growing as a CSO, and with that comes more strength in their work (ENR-CSO, 2018).

In other words, Friends of Zoka is playing a significant role in enhancing the conservation and protection of forests, with the Zoka CFR in particular. FoZ is creating awareness among communities by connecting with them. Moreover, they bring illegalities to light through different platforms, while putting their own lives at stake. Thus, it seems that FoZ is playing a positive role in fighting against deforestation in the Zoka Central Forest Reserve.

5.4 The mutual influence of the Ugandan government and Friends of Zoka

The sub-question *'how do the Ugandan government and Friends of Zoka influence each other while looking at the work both perform in relation to deforestation?'* is answered with the answers given in the interviews in relation to this topic.

According to Richard Ssemmanda, the relation between the government and CSOs, such as Friends of Zoka, in Uganda is not always very good, as they are being accused of being conduits for money for the political opposition (personal communication, 15 April 2020). The National Resistance Movement with President Yoweri Museveni is currently in power. He was already in control since 1986 and was officially elected in 1996 and has been re-elected every five years after new elections since (statehouse.go.ug, n.d.). During the last elections the opposition leader, Kizza Besigya, was arrested. The opposition believed that elections had been rigged in favour of Museveni (aljazeera.com, 2016).

Tina Lain adds to the relation between FoZ and the government, that *'and I am not a specialist in that, but I think they have been able to engage with different levels, but they also have been blocked by the system where they seized at some of these governmental officials that are also implicated in the destruction of the forest and then it is difficult to have a collaboration there'* (T. Lain, personal communication, 1 May 2020).

On the contrary, examples have been given where collaboration was taking place. *'Sometimes we get information from the government, especially the district forest office (...) about what is happening'* (J. Anzo, personal communication, 2 May 2020). In some cases, the NFA has been feeding information they gained on the ground to Friends of Zoka that helps them to protect the forest (R. Ssemmanda, personal communication, 15 April 2020). Anzo confirms this by saying that forest guards are informing FoZ, but they are not benefiting from it, and when they are bribed no information will be passed forward to Friends of Zoka. On the one hand when FoZ does inspections in the forest, they need security because the people doing the illegalities in the forest are guarded by people who have guns. FoZ therefore strongly believes that the government is playing a role in destroying the forest, as it is hard to get a licence for a gun as a private person, without being in the army. On the other hand, the police and army sometimes escort FoZ when going on inspections if they request this by the resident district commissioner (J. Anzo, personal communication, 2 May 2020). *'I would say that their relationship takes either way.'* (R. Ssemmanda, personal communication, 15 April 2020).

Next year there are supposed to be elections in Uganda and the work of FoZ most likely influences the political agenda for the elections. The people that want to become members of the parliament will be questioned about how they will ensure that the environment is no longer being destroyed and about the destruction that has already happened. Friends of Zoka made this a political discussion and is probably able to influence the agenda (Anonymous, personal communication, 11 April 2020).

Lastly, William Amanzuru states that FoZ and the government enhance each other. FoZ is aiming to increase each other's capacity and ability to work but many times the government does not believe what they have found *'but then we really get on to the truth and put it up or expose it somewhere, they give edge to understand and at times the truths convicts them to believe in what we do'*. Sometimes FoZ shows them information that they cannot deny and they end up being on their side, but this is done at a lower scale while many people involved in the abuse of the forest have high connections with the government (W. Amanzuru, personal communication, 12 April 2020).

In summary, it seems that the Ugandan government and Friends of Zoka influence each other in multiple ways. Sometimes they are standing shoulder to shoulder and times they are standing on opposite sites.

5.5 Possible solutions to prevent deforestation in the Zoka Central Forest Reserve

Lastly, the sub-question *'what could be possible solutions to prevent deforestation in the case of the Zoka Central Forest Reserve?'* is answered by looking at the advice that was given in the literature, policy documents and by the interviewees on this topic. Literature from Ostrom (1990) and Zake et al. (n.d.) was used together with the policy documents: Uganda Forest Policy (MWLE, 2001) and the National Forest Plan (MWLE, 2002). The National Forest and Tree Planting Act

(MWLE, 2003) was not examined, as it does not mention possible solutions. During all the interviews I have asked the interviewees for possible solutions for deforestation. These solutions include solutions for deforestation in general, as well as on the national level of Uganda and locally for the Zoka Central Forest Reserve.

According to Esteban Rossi urbanisation has contributed to less deforestation in Europe as people move into the cities and the people in the countryside became less poor. Another reason is that forests were given time to regrow again when the people left. He suggests therefore that solving social economic circumstances should be pursued, as poverty can be seen as an indirect cause of deforestation (E. Rossi, personal communication, 14 April 2020). On the local level of the Zoka CFR, Zake et al. (n.d.) suggest that socio-economic issues should be integrated into the forest management plans.

Ostrom's idea of managing common-property resources by setting measurements or sanctions, as referred to in figure three with design principle number 5 (Ostrom, 1990) is being used as an example in Brazil where it helped to stop federal funding of municipalities if they allowed deforestation to happen (E. Rossi, personal communication, 14 April 2020). That makes the municipalities in Brazil think twice about letting deforestation happen. This might also be a solution in the case of the Zoka Central Forest Reserve.

Tina Lain said that different kinds of approaches should be combined in order to fight deforestation: *'you need to have this community awareness and mobilisation, you need to have legal approaches, you need to look at different levels'*. She added to this that *'you need all the actors together to be able to have this kind of change [stopping deforestation]'*. The government should be involved to see how its institutions can be strengthened (T. Lain, personal communication, 1 May 2020). The local community around the forest reserve should be involved, as well as the local administration units in the area. There is a need for members in the parliament that come from these reserves to define the borders and institutions, because the parliament makes the laws and provides guidance, which is needed for the good of the natural resources in the forest reserves (W. Amanzuru, personal communication, 12 April 2020). In addition, Zake et al. (n.d.) state that it is important to consider the local communities' voice and that they should have the chance to participate in collaborative management initiatives.

Furthermore, civil society organisations, also on the international level, put pressure on the government and make the government act when they start condemning (J. Anzo, personal communication, 2 May 2020). Friends of Zoka needs to coordinate with other CSOs, *'especially those that have the same sort of thinking that would also bring another benefit in terms of resource mobilisation'* (R. Ssemmanda, personal communication, 15 April 2020). Next to this, FoZ needs to continue with what they are already doing in terms of community mobilisation, and the movement and community engagement is very important (T. Lain, personal communication, 1 May 2020). Besides, Ostrom (1990) states that collective-choice arrangements could work. This means that individuals who are affected by the operational rules can participate in modifying the operational rules. And thus, the community can get a say in making the rules as well. According to the Uganda Forest Policy (MWLE, 2001), the role of NGOs/CBOs, including Friends of Zoka, should be strengthened, with building capacity and creating participation in order to develop rights and responsibilities of forest users.

According to James Anzo, FoZ *'wants to make a connection that their lives [the communities] depends on the existence of this forest, once the forest is destroyed, their livelihood is threatened'*, so they must understand that it is their role to stop the forest from being destroyed (J. Anzo, personal communication, 2 May 2020). One of the guiding principles of the Uganda Forest Policy (MWLE, 2001) is that improving livelihoods is a major goal in the forestry sector, as this can contribute to less poverty within the communities. The local community is still growing and is organised in a traditional way, as the community members have been relying on the environment for generations. This might have to change to stop deforestation through, for example, encouraging the use of energy conservation stoves, which requires less wood. Upscaling the capacity of electricity can help causing deforestation, as people no longer have to use charcoal made from wood. Electrification in rural areas is being done as the government is listening to people coming to them (Anonymous, personal communication, 11 April 2020). More electrification can lead to less use of forest wood as an energy source. William Amanzuru mentions that the community around the forest needs to try to live in harmony with the forest, which can also address some challenges (W. Amanzuru, personal communication, 12 April 2020). In addition, community forest management might be a solution that to involve the communities as well (T. Lain, personal communication, 1 May 2020). If the Zoka Central Forest Reserve gets lost *'we are all globally losing a big sink'*, this is a problem and gives the global community also responsibility to come on board (R. Ssemmanda, personal communication, 15 April 2020).

Two other possible solutions of deforestation, already done by FoZ, are radio announcements and, in general, more publicity to pass the message of what is happening in the forest, so that the perpetrators get afraid and the government feels that they should act (J. Anzo, personal communication, 2 May 2020). Next to this, legal steps against the people that do these illegalities can be undertaken (T. Lain, personal communication, 1 May 2020). James Anzo adds here that FoZ is trying to go to court and sue these offenders and the local government for failing to fulfil their responsibilities (personal communication, 2 May 2020). On the other hand, Tina Lain said that FoZ might not be the organisation to do this, but rather should work together with other organisations in this field. This makes FoZ is less vulnerable but is still tackling the problem through different kind of approaches with the help of others (T. Lain, personal communication, 1 May 2020).

Solution number one, according to the anonymous employee of FoZ, should be putting the laws that are on written only on paper into practice, as these promote sustainable usage of the environment (Anonymous, personal communication, 11 April 2020). James Anzo said that *'the first solution is the political will from the government'*. He believes that if there is political will, deforestation can be stopped quickly, as the institutions are already in place (J. Anzo, personal communication, 2 May 2020). Besides, the right politics are needed because the politics manage the resources (Anonymous employee Friends of Zoka, personal communication, 11 April 2020). William Amanzuru shares these opinions by mentioning that it is hard to implement the laws without willing political power. He adds that the local government can help too, as they have the capacity to raise awareness within the community around it and they have the resources to implement the laws (personal communication, 12 April 2020).

The government should play a positive role and be an example for the citizens. They should plan in a better way when degazetting forests and think about the communities involved. This both can

be achieved by conducting research to get proper information (R. Ssemmanda, personal communication, 15 April 2020). The Ministry of Water, Lands and Environment should recruit more staff and build capacity to be able to oversee the forest sector. It is also important that the National Forest Plan is effectively coordinated, and that some of the other solutions provided in the in the National Forest Plan (MWLE, 2002) are put to practice. Ssemmanda also mentioned that the NFA should be strengthened to be able to monitor and patrol the forest and to be able to reach out to communities and inform the government about its departments that are actually taking part in the deforestation (R. Ssemmanda, personal communication, 15 April 2020). Tina Lain confirms this by saying that the position of the NFA should be strengthened, or maybe the NFA should be brought closer to the UWA and share the resources to gain a stronger position against other treats (T. Lain, personal communication, 1 May 2020). Zake et al. (n.d.) also state two issues that should be addressed and can be considered as practical strategies in the management of the Zoka Central Forest Reserve. Firstly, just like Ssemmanda said, the institutional capacity of the NFA should be strengthened. And secondly, the NFA and local governmental stakeholders should work closer together in coordinating and managing the CFRs. Merging the NFA and UWA together is something that is talked about before, as Ssemmanda said, *'but you know right now I don't know where that proposal is, it not one of the things that are being talked about right now'* (R. Ssemmanda, personal communication, 15 April 2020).

Finally, in case of solutions William Amanzuru said that *'if the people responsible to manage this forest reserve can be shifted to live around the forest reserve, that will be better'*, as the current situation is that the officers are 40 kilometres from where they are supposed to work. And lastly, he would like the laws to be made at the grassroots level. The punishments are too low which makes people not think about what they do (W. Amanzuru, personal communication, 12 April 2020).

6 Conclusion

The conclusion of the research is described in the first paragraph of this chapter. To write this conclusion the results in chapter five are interpreted and a conclusion has been drawn from the analysis of these results. The discussion and recommendations of and reflection on this research can be found in the second paragraph.

6.1 Answer to research question

In this paragraph the conclusion of this research is described by looking at the answers of the different sub-questions that were mentioned in chapter five to answer the main question of this research: *'How do the government and civil society organisations play a role in the causes of deforestation?'.* In this research, the government is the Ugandan government and the CSO is Friends of Zoka.

To answer the main question, I first looked at the causes of deforestation as presented in the literature in paragraphs 2.2 and 2.3 and the interviews. In paragraph 2.1., I explained that a tragedy of the commons, as described by Hardin (1968), is taking place when one overuses the common pool resource, resulting in depletion. This is also the case when deforestation is taking place.

Other causes that I found in the interviews are the following. Economic reasons and overpopulation and poverty are pointed out as general causes of deforestation by Rossi (E. Rossi, personal communication, 14 April 2020). At the national level of Uganda, 'corruption and political cause' and 'logging and fuel wood' can be seen as causes of deforestation. The first being an indirect cause and the second a direct cause of deforestation. The main causes of deforestation in the Zoka Central Forest Reserve are the commercial use of the forest, logging, and the use of wood as fuel. Next to these causes, corruption and political involvement were mentioned during the interviews as important causes of deforestation in the Zoka CFR.

Second, the role of the Ugandan government on the national and local level was examined. At the national level, the Ministry of Water, Lands and Environment is an important stakeholder as it is responsible for the formulation and oversight of policies in the forestry sector (MWLE, 2016). In the policy documents and the interviews, the role of the national government in deforestation became clearer. It is said that *'the government cannot claim to be playing its role. (...) the role they are supposed to do on paper is heaven on earth, but in reality, operations they are not there'* (Anonymous, personal communication, 11 April 2020). There is no political will to stop the deforestation, but that the government can stop deforestation if it wants to (J. Anzo, personal communication, 2 May 2020). Local people seem to play a role as middleman for the people in government (Anonymous, personal communication, 11 April 2020). The arms of the government are inside the Zoka CFR and therefore the government plays a role in deforestation (W. Amanzuru, personal communication, 12 April 2020). Thus, the national government seems to play a role in deforestation.

In addition to the national government, the NFA is an important stakeholder in the forestry sector in Uganda as it is responsible for the management of CFRs, included the Zoka CFR. The NFA is not living up to its expectations because it is not able to finance itself, and in addition to this, encroachments have been taking place (MWLE, 2016). The NFA does not have enough budget to

do the work which it is expected to do in protecting the forests. The main problem here is that they do not have the means to be on location quickly as the Zoka CFR is around 45 kilometres away (Anonymous, personal communication, 11 April 2020; R. Ssemmanda, personal communication, 15 April 2020). Next to this, the NFA is understaffed, especially at the field level (R. Ssemmanda, personal communication, 15 April 2020). William Amanzuru added to this that officials of the NFA came to them and said: *'we are underfunded, and we are under skilled'* and that *'our mandate power is not enough.'* (W. Amanzuru, personal communication, 12 April 2020). As a result, deforestation can continue taking place.

The district local governments are concerned with protecting the forest cover in the district, but the *'institutions are not doing what they are supposed to do, what they are mandated by the laws to do'* (J. Anzo, personal communication, 2 May 2020). Corruption is taking place as district forest officers are collecting revenues instead of telling that the trees should not be taken down (Anonymous, personal communication, 11 April 2020). Because of this it seems that the district local governments contribute to deforestation in the Zoka CFR.

Thirdly, I have looked at the role of Friends of Zoka as a civil society organisation in deforestation. FoZ wants to save the Zoka CFR from being destroyed. They create awareness, expose people involved (W. Amanzuru, personal communication, 12 April 2020), are putting pressure on the government and organise lobbying activities to be able to get financial support (J. Anzo, personal communication, 2 May 2020). Friends of Zoka has increased the public visibility by being on the ground with marches, making it more difficult for the government and other officials to continue the work of the destruction in the forest (T. Lain, personal communication, 1 May 2020). Thus, it seems that FoZ plays a positive role in deforestation by trying to stop the deforestation from happening with the possibilities they have available.

Fourth, the Ugandan government and Friends of Zoka influence each other at different levels. Richard Ssemmanda (personal communication, 15 April 2020) and Tina Lain (personal communication, 1 May 2020) state that FoZ did not always have a good relationship with the government as they have been blocked by the system. On the other hand, collaboration is taking place as FoZ sometimes receives information from the government or the NFA and FoZ is being guarded by the police and army when they go for inspections in the forest. But this same police and army are also protecting the people that do the illegalities. (J. Anzo, personal communication, 2 May 2020). To conclude, interaction is taking place between the government and Friends of Zoka, which can be both positive and negative interaction.

Finally, with fifth sub-question, I looked at possible solutions against deforestation. Important findings in the literature are solutions that were mentioned by Zake et al. (n.d.) and the guiding principles in the Uganda Forest Policy (MWLE, 2001). In addition, I looked at the design principles of Ostrom (figure 3) as possible solutions for the case of the Zoka Central Forest Reserve.

During the interviews, possible solutions have been discussed as well. The laws of the government should be put into practice (Anonymous, personal communication, 11 April 2020). Next to this, it is of great importance that different approaches should be combined to fight deforestation. These approaches can be community awareness raising and mobilisation, legal approaches and working together with the government according to Tina Lain (personal communication, 1 May 2020). The local communities should be involved, so that they realise how important the forest is for their

livelihoods (J. Anzo, personal communication, 2 May 2020). And the NFA should be strengthened (T. Lain, personal communication, 1 May 2020). These solutions could help making deforestation happen less often, or even make it disappear.

With the answers to the sub-questions on the role of the government and the role of Friends of Zoka, I can answer the main research question: *'how do the government and civil society organisations play a role in the causes of deforestation?'*.

First, I have described the role of the Ugandan government and its departments. The national government is an important stakeholder as it is responsible for the formulation and oversight of the policies in the forestry sector (MWLE, 2016). However, it seems that the government is not playing this role as it should be (Anonymous employee of Friends of Zoka, personal communication, 11 April 2020). This might be one of the reasons that deforestation is taking place. In addition, the NFA is an important stakeholder in preventing deforestation from happening, but the NFA does not have the budget (MWLE, 2016) and staff to do this properly (R. Ssemmanda, personal communication, 15 April 2020). On the local level, the district local governments seem to add to the problem of deforestation by taking revenues and not performing the work that is expected of them (J. Anzo, personal communication, 11 April 2020).

Second, I have described the role of Friends of Zoka as a civil society organisation that fights against deforestation. Friends of Zoka is aiming to save the Zoka Central Forest Reserve by acting on different levels and organising different activities. This includes creating awareness among communities and mobilise these communities, exposing people involved in deforestation (W. Amanzuru, personal communication, 12 April 2020), and putting pressure on the government to get the government to act (J. Anzo, personal communication, 2 May 2020).

To conclude, the government appears to contribute to the problem of deforestation as there is no political will, no means for the NFA to prevent deforestation and corruption is appears to be taking place at different levels within the government. On the other hand, Friends of Zoka seems to play a positive role in deforestation by aiming to save the Zoka CFR from being destroyed by undertaking action in different ways to try to stop the deforestation.

6.2 Discussion, recommendations, and reflection

In this paragraph I will go deeper into the discussion and recommendations of this research. And reflect on the research as well.

A few notes should be considered while reading this research. Firstly, I am personally involved in the case of the Zoka Central Forest Reserve as I worked with William Amanzuru for a period of three months during my internship with the Shelter City project at Bureau Wijland. He brought me in contact with two of his colleagues to also do an interview, so there are three people involved from Friends of Zoka. I did try to have the interviews with people from other points of view to create balance in the case study and I think the input of the others have made this possible. Secondly, this research is carried out during the times of a pandemic caused by covid-19. I think it could have added value the quality of the research to be able to be on location in the Zoka Central Forest Reserve to observe (the effects of) deforestation. Despite this situation I did not experience any problems in conducting the research while being in the Netherlands, as there are many options to get in contact with people located in other parts of the world.

Beforehand, I did know about the situation in the Zoka CFR because of my work with William Amanzuru. Therefore, I expected that the role of Friends of Zoka and the government would probably be as described in the conclusion in chapter five. However, I did personally learn a lot more about the situation, its causes, who is involved, and what could be solutions in this case.

I not only learned from this thesis research, but I also hope that the outcome of this research can also make the situation of the Zoka Central Forest Reserve clearer and that the solutions mentioned can be implemented. Thus, I do hope that this thesis can be a useful source of information for Friends of Zoka, with its combination of different theoretical, academic, and activist insights in both the specific situation in the Zoka Central Forest Reserve, in Uganda and also in more global developments. And I hope that Friends of Zoka might use this research in further carrying out the work that they do as a CSO fighting against deforestation in the Zoka Central Forest Reserve. The main recommendations for Friends of Zoka are to keep up the work they were already doing, with mobilising the communities and creating awareness amongst community members to be able to perform change in the current situation. Another recommendation is, if they could try to see if the NFA can be strengthened so that the NFA can perform their jobs better and protect the Zoka CFR as they should be doing.

Further research in Central Forest Reserves in Uganda could be done to get an overview of the causes of deforestation in CFRs nationally. This information is useful to address the deforestation and with that maybe making it happen less often or even disappear. In addition, global and local advocacy groups, like Friends of Zoka, should be strengthened and the rights of environmental activists should be better protected worldwide. In this way they can perform their work in a safer way. Next to this, it would be a good development if the government, NGOs and CSOs, like Friends of Zoka, can work together in a more sustainable way in protecting the environment around us for future generations. Thus, it might be relevant to do further research on these topics to be able to strengthen advocacy groups and create a more sustainable way of protecting our surroundings.

References

Figures

Figure 1:

Sherif, R. (2018) Adjumani - Zoka Central Forest Reserve. Retrieved at 19th of January 2020
<https://www.flickr.com/photos/faoforestry/41520405742/in/photostream/>

Figure 2:

Hansen, M.C., Potapov, P.V., Moore, R., Hancher, M., Turubanova, S.A., Tyukavina, A., Thau, D., Stehman, S.V., Goetz, S.J., Loveland, T.R., Kommareddy, A., Egorov, A., Chini, L., Justice C.O., and Townshend, J.R.G. (2013). Global Forest Change. University of Maryland, department of Geography Science. Retrieved at 19th of January 2020 from
<http://earthenginepartners.appspot.com/science-2013-global-forest>

Figure 3:

Ostrom, E. (1990). Governing the commons: The evolution of institutions for collective action: Cambridge university press. pp. 90.

Figure 4:

Pictures of Zoka Central Forest Reserve. (W. Amanzuru, personal communication, 28 May 2020).

Figure 5:

Zake, Sekate & Herbert (n.d.). Key issues limiting sustainable management of central forest reserves in Uganda; A case of Zoka and Agoro-Agu central forest reserves. Retrieved from
envalert.org/wp-content/uploads/2016/10/Key-issues-limiting-sustainable-management-Uganda.pdf

Figure 6:

NFA. (2016). Major Central Forest Reserves of Uganda. Produced by Mapping and Inventory Centre, National Forestry Authority.

Figure 7:

The logo of Friends of Zoka. (W. Amanzuru, personal communication, 28 May 2020).

Figure 8:

Ministry of Water, Lands and Environment (2016). Uganda Forestry Policy (2001) Guiding Principles.

Figure 9:

Ministry of Water, Lands and Environment (2003). The purposes of the National Forestry and Tree Planting Act (2003)

Figure 10:

Code group of 'direct causes of deforestation' (left) and code group of 'indirect causes of deforestation' (right).

Literature

- Addink, H. (2019). Good governance: Concept and context. Oxford University Press.
- AJWS. (2017). Promoting Human Rights in Uganda. *American Jewish World Service*. Retrieved from https://ajws-americanjewishwo.netdna-ssl.com/wp-content/uploads/2017/01/Uganda_Country_Profile_ForWeb.pdf
- Aljazeera.com (2016). Opposition leader arrested as Uganda holds elections. Retrieved at 5 June 2020 from <https://www.aljazeera.com/news/2016/02/ugandans-vote-museveni-seeks-extend-30-year-rule-160218044525608.html>
- Bonan, G. (2018). Confronting Hardin: Trends and Approaches to the Commons in Historiography. *Theoretical Inquiries in Law*, 19(2), 617-632.
- Brack, D. (2005). Controlling Illegal Logging and the Trade in Illegally Harvested Timber: the EU's Forest Law Enforcement, Governance and Trade Initiative. *Review of European Community and International Environmental Law*, 14(1), 28-38. doi:10.1111/j.1467-9388.2005.00421.x
- Chakravarty, S., Ghosh, S. K., Suresh, C. P., Dey, A. N., & Shukla, G. (2012). Deforestation: causes, effects and control strategies. *Global perspectives on sustainable forest management*, 1, 1-26.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: choosing among five approaches* (Vol. 2nd edition): SAGE publications.
- Derouin, S. (2019). Deforestation: facts, causes & effects. Retrieved at 10 February 2020 from <https://www.livescience.com/27692-deforestation.html>
- Diisi, J. (2018). *Status of Forestry in Uganda*. Presentation presented at the MWE JTR-MASAKA, Masaka.
- Dobsen, C. (2020). In-depth Interview with William Leslie Amanzuru - Friends of ZOKA (Oct 2019). Retrieved at 5 June 2020 from <https://www.business-humanrights.org/en/in-depth-interview-with-william-leslie-amanzuru-friends-of-zoka-oct-2019>
- ENR-CSO. (2017). Network for Civil Society Organisation in Environment & Natural Resources Sector. Retrieved at 23 March 2020 from <http://enr-cso.org/>
- ENR-CSO. (2018). *Environment & Natural Resources Civil Society Organisation consolidated annual performance report, 2018*. Retrieved at 23 March 2020 from <http://envalert.org/wp-content/uploads/2016/09/ENR-CSO-Annual-Report201811March2019.pdf>
- ENR-CSO. (2019). *ENR-CSOs Position Paper on Performance in the Water and Environment sector for the Financial Year 2018/19*. Retrieved at 23 March 2020 from <http://envalert.org/enr-csos-position-paper-on-performance-in-the-water-and-environment-sector-for-the-financial-year-201819/>

- Feeny, D., Berkes, F., McCay, B. J., & Acheson, J. M. (1990). The tragedy of the commons: twenty-two years later. *Human ecology*, 18(1), 1-19.
- Friends of Zoka (2020). Quarter 1 progress report: January-March 2020. *Submitted to IUCNL*.
- Friends of Zoka (n.d.). *Friends of Zoka Report*. Document shared through mail from W. Amanzuru on 11 April 2020
- FriendsofZoka. (2019). About Friends of Zoka. Retrieved at 2 April 2020 from <https://friendsofzoka.org/about-friends-of-zoka/>
- Frischmann, B. M., Marciano, A., & Ramello, G. B. (2019). Retrospectives: tragedy of the commons after 50 Years. *Journal of Economic Perspectives*, 33(4), 211-228.
- Geist, H. J., & Lambin, E. F. (2002). Proximate Causes and Underlying Driving Forces of Tropical Deforestation Tropical forests are disappearing as the result of many pressures, both local and regional, acting in various combinations in different geographical locations. *BioScience*, 52(2), 143-150.
- Global Witness (2018). *Of the state*. Retrieved at 5 June 2020 from <https://www.globalwitness.org/en/campaigns/environmental-activists/enemies-state/>
- Hardin, G. (1968). The tragedy of the commons. *SCIENCE*, 162(3859), 1243-1248.
- Lindgren, M. (n.d.). Interview with Mr. William Amanzuru, winner of the EU Human Rights Defenders Award 2019. Retrieved 5 June 2020 from <https://www.swedenabroad.se/globalassets/ambassador/interview-with-william-amanzuru.pdf>
- Mbayo, E. M. (2016). *Statement on the illegal activities in Zoka Central Forest Reserve*. Retrieved at 11 April 2020 from <https://www.parliament.go.ug/cmris/browser?id=4179be58-7d29-49dd-88f3-55384562de91%3B1.0>
- McClennen, S. A. (2019). A Biopolitics of the Commons. *Minnesota Review*, 93, 68-74.
- Ministry of Water, Lands and Environment. (2001). *The uganda forestry policy*.
- Ministry of Water, Lands and Environment. (2002). *The National Forest Plan*.
- Ministry of Water, Lands and Environment. (2003). *The National Forestry and Tree Planting Act, 2003*.
- Ministry of Water, Lands and Environment. (2016). *State of Uganda's Forestry 2016*.
- NFA. (2016). *Business plan 2016/2017 - 2020-2021*.
- Obua, J., Agea, J. G., & Ogwal, J. J. (2010). Status of forests in Uganda. *African Journal of Ecology*, 48(4), 853-859. doi:10.1111/j.1365-2028.2010.01217.x
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*: Cambridge university press.

- Ostrom, V. (1973). Can federalism make a difference? *Publius: The Journal of Federalism*, 3(2), 197-237. doi:10.1093/oxfordjournals.pubjof.a038279
- Otum, U., Frederick, I., & Martina, K. (2017). Tragedy of the commons and economics of deforestation in Nigeria. *Journal of Biodiversity Management and Forestry*, 7, 1-3.
- Perez-Verdin, G., Kim, Y.-S., Hospodarsky, D., & Tecle, A. (2009). Factors driving deforestation in common-pool resources in northern Mexico. *Journal of environmental management*, 90(1), 331-340.
- Republic of Uganda (1995). *Constitution of the Republic of Uganda*.
- Robbins, P., Hintz, J., & Moore, S. A. (2014). *Environment and Society: A Critical Introduction*. Hoboken, United Kingdom: John Wiley & Sons, Incorporated.
- Scotland, N., & Ludwig, S. (2002, April). Deforestation, the timber trade and illegal logging. In EC Workshop on Forest Law, Enforcement, Governance and Trade, Brussels.
- Shepherd, G., Kazoora, C., & Müller, D. (2013). Forests, livelihoods and Poverty Alleviation: the case of Uganda. Forestry Policy and Institutions Working Paper, 32.
- Sheram, K. (1993). The Environmental Data Book: A Guide to Statistics on the Environment and Development. International Bank for Reconstruction and Development, The World Bank, Washington DC.
- Southgate, D., & Runge, C. F. (1990). The institutional origins of deforestation in Latin America (No. 1701-2016-139109).
- Souwieon.com. (2019). William Amanzuru on saving Zoka Forest. Retrieved at 5 June 2020 from <https://souwieon.com/tag/zoka-forest/>
- Statehouse.go.ug (n.d.). About Uganda. <https://www.statehouse.go.ug/about-uganda>
- Sunderlin, W. D., Angelsen, A., Belcher, B., Burgers, P., Nasi, R., Santoso, L., Wunder, S. (2005). Livelihoods, forests, and conservation in developing countries: an overview. *World Development*, 33, 1383-1402. doi:10.1016/j.worlddev.2004.10.004
- Tacconi, L. (Ed.). (2012). *Illegal Logging: Law Enforcement, Livelihoods and the Timber Trade*. Routledge.
- Turyahabwe, N., Kakuru, W., Asiimwe, M., & Byakagaba, P. (2015). Proximate and Underlying Causes of Illegal Timber Trade in Uganda. *Precious Forests: Precious Earth*, 1.
- Uhuru. (2019). Environmental Defender Amanzuru is receiving death threatening messages from Ugandan Ministry of Health Employee Kevin Kelike Aza. Retrieved at 5 June 2020 from <https://www.albertinewatchdog.org/2019/04/13/environmental-defender-amanzuru-is-receiving-death-threatening-messages-from-ugandan-ministry-of-health-employee-kevin-kelike-aza/>

UN Guiding Principles, (n.d.). Civil Society Organisations (CSOs). Retrieved at 19 April 2020 from <https://www.ungpreporting.org/glossary/civil-society-organizations-csos/>

Van Kooten, G. C., & Bulte, E. H. (2000). *The economics of nature: managing biological assets*. Blackwell Publishers.

Vennix, J. A. M. (2016). *Onderzoeks- en interventiemethodologie*: Pearson.

Zake, J. S., Nkwine, C., Magunda, M. K. (1999). *Integrated Soil Management for Sustainable Agriculture and Food Security in Southern and East Africa: Proceedings of the Expert Consultation*. Rome: Food and Agriculture Organization of the United Nations

Zake, J. S., Sekate, M., Herbert, W. (n.d.). *Key issues limiting sustainable management of central forest reserves in Uganda; A case of Zoka and Agoro-Agu central forest reserves*. Retrieved at 25 April 2020 from <http://envalert.org/wp-content/uploads/2016/10/Key-issues-limiting-sustainable-management-Uganda.pdf>