# Reciprocity in Nature tourism

Research in visitors' willingness to pay for maintaining the route networks

# FINAL PROJECT REPORT



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### Key summary

In The Netherlands, the Veluwezoom National Park is one of the most visited natural areas by tourists. The Veluwezoom is a forest and nature area of about 50 square kilometers (Parks s.d.), containing many trails and paths. Pressure on the natural area and its management increases as the number of visitors increases. What is often overlooked is that a considerable price needs to be paid to keep tourism functioning. A significant natural area such as a national park needs constant maintenance to keep the environment healthy and intact and ensure safety for tourists. A big expense for Veluwezoom is its infrastructure, as it constantly needs to be maintained and monitored. The deficit of the maintenance for the area lies somewhere between 2 and 4 million euros which is expected to grow each year. Therefore, this raises the question of who should pay for these expenses when existing revenues are insufficient. This paper focuses on the willingness to pay (WTP) of visitors.

On average, visitors are willing to donate  $\leq 2.02$  per person. We come to a value of approximately  $\leq 2.19$  million. There are different factors that we say affected visitor's WTP. The most interesting factors according to our data are age group, residence area and Natuurmonumenten membership. According to our data analysis, there is a significant difference in WTP between people aged 18-49 and older people.

Our study presents evidence that there is a positive relationship between awareness and WTP for the maintenance of a natural area. Specifically, we found that people who are more aware of the importance of the natural area are more willing to pay and donate for its maintenance. This finding has important implications for the managing organization, which is strongly advised to improve the awareness spreading system. By increasing awareness about the importance of natural areas, it may be possible to increase public support for the maintenance and conservation of these areas and therefore the income of the park. By doing so, we can better protect these important ecosystems for future generations and assure safety and a high-quality experience for visitors. Our recommendations to get visitors to pay are: (1) Putting a big board with information (information sign) and a QR code in the busiest places in the park. (2) Installing boxes next to each QR code board that will be dedicated to cash method donations. (3) Increasing education about the Veluwezoom National Park and the importance of nature through the newsletter/social media and email which visitors can subscribe to. Furthermore, we would like to add that improving uniformity in the management of the Veluwezoom can alleviate the monetary deficit as well.

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Vragenlijst Nederlands

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## **I-INTRODUCTION**

In most cases, tourism brings an exciting image to people because it brings many benefits to the local economy. The excellent natural scenery attracts tourists who spend money on hotels, food, leisure and other recreational activities, increasing the income of residents and government tax revenues. However, there is a difference between day tourism and tourists who spend at least one night at the Veluwezoom. People who only go to the area for a day are more likely to bring their own lunch and thus spend less on the local businesses. In addition, the more tourists there are, the more jobs can be provided (*Kumar et al. 2015*). This also depends on the duration of the stay for each visitor who might prefer a short-stay or long-stay. However, global tourism growth was highly disrupted by the COVID-19 pandemic. After 2021, as more countries recover from COVID-19, tourist arrivals in some regions have not only returned to pre-pandemic levels but have even surpassed the levels (*UNWTO, 2020*). Nowadays, tourism to nature is becoming more and more popular. Visiting nature allows people to escape from urban pollution and pressure which is beneficial for their physical and mental health. It also provides people with platforms to know more about natural environments and wildlife.

In The Netherlands, the Veluwezoom National Park is one of the most visited natural areas by tourists. The Veluwezoom is a forest and nature area of about 50 square kilometers, containing lots of trail paths and characterized by the suggestive and peculiar landscapes which add to its popularity as a tourist destination. The routes available in the park are extremely variable, from less than 5km trails to 53km long loop trails with quite some elevation differences<sup>1</sup>, creating an opportunity for everyone to enjoy the beauty of the surrounding nature and giving space for many different types of visitors: from families looking for a calm, safe and relaxed day to spend with their children, to adventure seeker through people who are looking to connect with nature and groups of people hiking with their dog(s).

The park is particularly appreciated by hikers, but also cyclists and horse riders often make use of the trail paths. The different facilities in the park offer a bike rental service, and many horse-riding centers around the area offer to their clients the opportunity to take a walk in the park, and often advertise it as one of their strongest points because of the charming features of the landscapes.

However, during covid, the visitors consequently increased which had an impact on the economy of the park and the conservation of nature due to the increased usage of the routes. This rapid variation of the number of visitors led the National Park to undergo some difficulties regarding its investments for nature conservation. Even after the end of the covid pandemic, the number of visitors remains high and even still increases by 20%.

#### I.I - The problem

Pressure on the natural area and its management increases as the number of visitors increases. What is often overlooked is that a considerable price needs to be paid to keep tourism functioning. A significant natural area such as a national park needs constant maintenance to keep the environment healthy and intact and ensure safety for tourists. A big expense for Veluwezoom is its infrastructure, as it constantly needs to be maintained and monitored. For example, dead trees near paths need to be removed and potholes in the roads need to be repaired. Trash that is being left in the nature area needs to be removed. Also, the maintenance of the signs for the routes is a constant issue. Not just due to natural wear and tear but signs also get vandalized. And people also sometimes go off track which again leads to higher maintenance costs due to them trampling plants and leaving trash. This leads to large management costs, which are currently not compensated enough by the subsidies and income for the landowners, such as Natuurmonumenten, receive. The deficit of the maintenance for the area lies somewhere between 2 and 4 million euros which is expected to grow each year. Therefore, this raises the question of who should pay for these expenses when existing revenues are insufficient.

#### I.II - Our project scope

Tourisme Veluwe Arnhem Nijmegen gave us a mission that is to explore the possibilities for visitors to cover these expenses. Tourism Veluwe Arnhem Nijmegen is a tourism bureau in Gelderland which leads the growing number of tourists in the right tracks. They analyze data, share trends and advise

<sup>&</sup>lt;sup>1</sup> https://national-parks.org/netherlands/veluwezoom

(local) businesses as well as regional governments. Through social research we came up with some recommendations that could help increase the willingness of people to donate and contribute to the maintenance of the Veluwezoom park. Our focus has been on the one hand on visitors' willingness to pay (WTP) when they visit the natural area, as well as how to increase awareness of maintenance among visitors, as we expected these two aspects to interlink.

We used the following research questions to come up with suggestions for our commissioner and we based our research on them:

Main question:

What is the willingness to pay for a crowd-sourced project in which revenue will be used for maintaining the route network?

Sub questions:

- A) What different factors affect visitors' willingness to pay?
- B) (How) is willingness to pay related to visitor's awareness?
- C) How much can the alternative revenue stream generate?

#### I.III - The team

Our team members hold a diverse academic background, which makes a good point of strength for the team, as we can look at the issue from many points of view.

We worked in synergy, each of us contributing with our qualities and competencies and compensating for each other's lacks. We had brainstorming sessions where we would think all together and come up with ideas and plans, then, based on what we came up with, we would divide the tasks so that all of us could have a reasonable amount of work to do, and we could all contribute to the product equally. We designed surveys and questionnaires and went on the field to submit them to the Veluwezoom area visitors, making them an active part of the project.

Our project is commissioned by Omar de Beek, and we are supported by our team coach Angela Pachuau, who has been following our work, helping us be better group workers by giving us interesting advice and making us reason about our learning goals.

#### I.IV - This report

Following this introduction, we will elaborate on our used methodology. After that we will start answering our research questions by providing a literature review, followed by an analysis of the survey results. In the discussion and conclusion, we will wrap our findings together and talk about the limitations of this research, after which we will finally provide concrete recommendations for Tourisme Veluwe Arnhem Nijmegen.

# II- METHODOLOGY

In this chapter we will elaborate on the several research methods we used to answer our research questions as well as their biases. Because of the nature of our research questions, we chose to use both qualitative and quantitative methods, as well as a literature review.

#### II.I - Literature review

We conducted a literature review which was aimed to help us understand the different factors that make people willing to pay when they visit a public natural area and their level of awareness about nature conservation, especially in National Parks. Our focus was on the analysis of people's awareness about their environment and nature, and their willingness to help financially to preserve it. The literature review supports our findings and analysis about the WTP for nature conservation depending on the context socio-demographic that differs from one country to another.

Most of the articles about the WTP for nature conservation and the awareness of people have been found in scientific articles found with GOOGLE Scholar, using the keywords of "tourism income", "visitors' willingness to pay" and "Veluwezoom national park".

The main questions we focused on with this literature review are:

- How does Veluwezoom national park generate income currently?
- What makes visitors want to pay to visit a natural area?
- Are people aware and educated enough about nature and their environment to be willing to pay?

#### II.II - Qualitative methods

#### II.II.I - Target group

Our target group contains all the visitors of the Veluwezoom area, which we divided along the lines of inhabitants (people living close to the Veluwezoom) and tourists (people living further away from the Veluwezoom). Besides these target groups, we included some of the perspectives of business owners in the area as well as RouteBureau.

#### II.II.II - Interviews

Within the available time frame and the availability of respondents, we were able to conduct four interviews. With these interviews we gained some insights into visitors' and local organizations' perceptions, experiences and opinions towards visitors' WTP as well as best ways to raise awareness.

We choose to use this qualitative method as it enables us to adopt an inductive approach, whereby ideas and perspectives might come up that lay beyond our expectations and theories. Semistructured interviews are a suitable method for this project, as it gives the researcher control over the topics while leaving space for the interviewe to come up with what is relevant for them. Beforehand, we created a topic list, or 'interview protocol' (see appendix 1) with important themes (Bryman 2012).

#### II.II.III - Surveys

During the fourth and fifth week of the project we created a survey according to the WTP. The WTP indicates the maximum amount of money that people are willing to pay for certain goods or services (*Merino-Castelló 2003*). The difference between WTP and the actual amount paid by people is their surplus. There are multiple strategies to derive the WTP. For this project, we used the contingent valuation approach (CVA). The CVA approach describes a hypothetical scenario, and asks the maximum amount that people are willing to pay for this scenario (*Merino-Castelló 2003*). We used this method because of its flexibility to estimate how people value the Veluwezoom area. Also, the results of this method are easy to analyze. However, this method does assume that people know how to value the nature area. But most people are unused to setting a value on nature and thus might not have the right basis to justify their response. People might also associate the Veluwezoom area with overall natural health and might answer the question differently than they would if asked in a vacuum. Lastly the order of the questions could also add a bias to the results<sup>2</sup>.

<sup>&</sup>lt;sup>2</sup> https://www.ecosystemvaluation.org/contingent\_valuation.htm#advantage

In our case the hypothetical scenario was an information sign we created (see appendix 4). Before and after seeing this information sign, respondents were asked what their WTP was. With this method we hoped to see if people's WTP changed after receiving more information about the purpose of the donation money, which relates to awareness.

The CVA has an open-ended variant and a closed one. We chose to ask closed questions, meaning we gave a range of monetary valuation categories rather than letting people fill in their maximum WTP in an open question. The latter variant is more susceptible for biases as respondents tend to find open questions difficult, especially in hypothetical situations. It is therefore easier to give them a range of options they can choose from (*Merino-Castelló 2003*).

We created three types of information signs: a direct (management) approach, an indirect (emotional) approach and one that combined these approaches. The direct one focuses strictly on what the problem is, also using a minimalistic setup (bullet list), suggests the visitors to donate in a detached way, while the Indirect/emotional one recalls the feelings of affection of visitors towards the area, and tries to evocate compassion. We chose to use three different variants, as a specific framing of a topic influences how people understand and respond to the information. It is important to tailor a message to its audience, but as we do not know what the Veluwezoom visitors think, we decided to research the difference in the various framing styles. We choose for these three specific approaches as we wanted to test whether an 'objective' (management) or a more 'emotional' framing, or a mix of these, would enhance their WTP and understanding (*Kusmanoff et al. 2020*). With a randomizer tool we could make sure the different information signs were randomly assigned to respondents, allowing us to analyze the effect of the different approaches.

Between February 23<sup>rd</sup> until March 2<sup>nd</sup>, we conducted surveys in the Veluwezoom area for five days. During these days we were present on three locations: the visitor's center in Rheden, the Schaapskooi and the Posbank (fig. 1). We chose these locations because many visitors pass either of these spots. Moreover, the visitor's center and Posbank are two locations from which many routes start and have facilities such as parking spaces, toilets and lunchrooms, which also attracts more traffic. We made sure to have the survey accessible digitally via QR code or on laptops, but also on paper for people who preferred that.

Besides surveying on location and approaching visitors, we also used several other channels to distribute our survey:

- Online Facebook groups related to the Veluwezoom
- Our personal network
- A flyer with a QR-code (Appendix 3): we spread this flyer in the restaurant in the Bezoekerscentrum and the Posbank, as well as in the mailboxes of the people living on the Dokter Langemijerweg and Parallelweg in Rheden

All in all, we received 84 responses, which makes us reach our target of a minimum of 80 responses.

#### II.III - Risks

One of the risks considered in this research was represented by the eventuality of not being able to get enough respondents for our interviews and surveys. Eventually we did not get the chance to interview the number of people we wanted, but our surveys were able to compensate for that.

Besides this, our research methods posed the risk of getting misunderstood by the visitors we were trying to involve in. Respondents sometimes thought we were asking them for donations, or through a fee might be implemented. In these cases, we had to communicate very clearly about our objectives and independence from any organization.

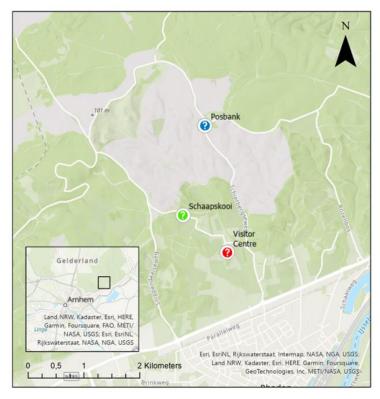


Figure 1. Map displaying the 3 survey locations.

# III – LITERATURE REVIEW

In this chapter, we will analyze the WTP for nature conservation and the importance of visitors' awareness to increase their WTP. The literature review gives us a broad view on the WTP for nature conservation and demonstrates the factors that support, or negatively impact, the WTP of visitors when visiting a natural area. This review is based on many studies that have been undertook in many countries in Europe, and especially in the Netherlands.

#### III.I - Income management

Tourist attractions generate revenue directly from visitor spending at hotels, restaurants, recreational activities and facilities, and retail<sup>3</sup>, while also indirectly contributing to the local economy (*Kumar et al. 2015*). For instance, restaurants increase their orders to businesses supplying raw materials due to the increase of visitors. The economic benefits of tourism are highly correlated with the fees paid by tourists, so different destinations strive to attract more visitors and encourage them to spend more or stay longer.

National parks stand out as unique tourist destinations due to their remarkable natural beauty, rich biodiversity, and focus on conservation. Unlike typical tourist attractions, the emphasis here is on preserving the natural environment. To reduce the impact on nature, common income-generating facilities such as hotels, restaurants, and retail outlets are located nearby towns. Only primarily recreational services are equipped within the park, with parking lots and cycling facilities for example. There are only a few restaurants in Veluwezoom National Park, mainly around the Posbank and visitor center, with only one restaurant in the middle of the park (Figure 2). As a result, the consumption of hotels, restaurants and retail takes place mainly in the neighboring communities and the income generated by tourism mainly benefits the surrounding towns.

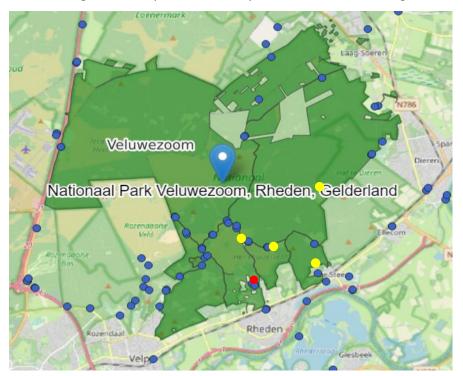


Figure 2. Distribution of facilities in the Veluwezoom national park. Dark green is the region belonging to the national park. The blue dots are parking lots, yellow dots are restaurants, and the red dot is the visitor center.

Natuurmonumenten is the predominant management organization of this national park. As a nonprofit organization, they receive government funding, including the National Postcode Lottery and direct project investments. They also receive direct donations and subscription fees from visitors and inheritances from sympathizers. Visitors can subscribe to Natuurmonumenten and receive information about events in the National Park and discounts on participation. In addition, Natuurmonumenten generates revenue through cooperation with related companies, such as route planning (Fiets netwerk), car rental (Arval) and holiday management (Landal Green Parks).

<sup>&</sup>lt;sup>3</sup> https://national-parks.org/netherlands/veluwezoom

Routebureau is also an important protagonist as the maintenance of routes is the focus of our project. The Routebureau Veluwe is a foundation that plans and manages routes in all 21 municipalities of the Veluwe region and is a part of the Veluweop1 program. The organization is committed to designing and maintaining a unified regional network that provides easy and environmentally friendly services for walkers, cyclists, mountain bikers, drivers and horse riders. Their main financial support comes from the government, and they also sell some trail guides to tourists. Companies can order products to promote their routes but are not allowed to add any advertising to the infrastructure road signs. Whether it is Natuurmonumenten or Routebureau, their main financial support comes from the government<sup>4</sup>. The key to successfully managing the park's route relies on how these donations are distributed. The funds are not directly accessible to all parties and the distribution is not equitable. The NGOs believe that private landowners should not make much money through government funding, yet routes had to cross private lands to form a complete road network. Similar conflicts run through almost every aspect of national park management.

The management of the Veluwezoom area needs a complex decision-making process. Firstly, the national park covers a very large area (5000 ha) and requires considerable human and financial resources. Secondly, the composition of the land is also very diverse. The largest landowner is the NGO Natuurmonumenten, but much of the land is also privately owned. Most areas owned by Natuurmonumenten are open to the public, with roads for visitors linking areas belonging to different owners (Figure 3). The coordination of the different parties involved therefore becomes particularly important for successful management. The main motivation of the NGOs is to preserve the natural value of areas, while private landowners often rely on their land to generate income, whether through activities such as animal husbandry or forestry. The province of Gelderland and the municipality of Rheden, on the other hand, want to attract visitors to the park and increase tax revenues and jobs, while maintaining and protecting the nature of the province.



Figure 3. A network of routes within the Veluwezoom national park. The two pictures on the left partially enlarged images showing the routes through land under different ownership. The dark green areas belong to Natuurmonumenten and the light green areas to private individuals.

The coordination of multiple parties often leads to conflicts of interest. A case in point is the heated discussion in the 90s in Veluwezoom about traffic management measures. At the time, Natuurmonumenten wanted to reduce the number of cars entering the park to protect the natural environment and therefore submitted a series of traffic control applications to the local authorities. These measures aroused strong opposition from nearby residents and regular visitors. A follow-up survey revealed that most visitors did not believe that there was a problem with too many cars in the park. Such a difference in perception made the managers aware of the need to introduce a visitor

<sup>&</sup>lt;sup>4</sup> https://www.veluweop1.nl/projectenoverzicht/

monitoring system and display instructions to the public (*Regnerus et al. 2007*). From this case, we can observe that the opinions of visitors had a strong influence on the management of the national park, but also that they were not fully aware of the environmental issues. They did not realize that there were too many vehicles in the park and did not consider that a few vehicles would already have a significant negative impact on the environment. Visitors' lack of knowledge of environmental issues is a barrier to national park management and natural conservation.

#### III.II - Awareness raising

As mentioned before, due to high expenses, nature conservation requires high financial investments which public funds alone cannot suffice. Additional capital is urgently required to maintain these areas and ensure their long-term preservation. The free entrance for tourists to natural areas leads to a gap in the budget for the maintenance of the areas. Moreover, the number of tourists is constantly increasing and that causes a faster deterioration of the area and a bigger gap in the budget dedicated to maintenance. Making visitors pay their entrance fee can be one solution to reduce this gap in the short term. But this possible solution comes with several questions:

- What makes visitors want to pay to visit a natural area?
- Is everyone willing to pay to visit a "public" natural area?
- Are people aware and educated enough about nature and their environment to be willing to pay?

Literature in tourism and nature conservation describe many factors that determine tourists' WTP to visit a protected area. In order to implement new actions and processes to increase financial benefits for nature conservation, it is important to identify and analyze these factors. Indeed, being informed of these different factors will help the organization to implement efficient actions that will lead to making money for nature conservation by increasing the WTP of the visitors. Firstly, the number of recreational activities is a big support to attract more visitors. Indeed, the visitors have many choices to spend time in the area, such as cycling, hiking, horseback riding, and so on. As a result, most of them try different activities which make them visit the area many times and make them willing to pay to keep feeling the satisfaction these activities bring them (*Araújo et al. 2022*).

Secondly, the socio-economic factors play a key role in the WTP. Age, sex, education, level of income, and the purpose of the visit (for nature landscape, for activities, etc.) are determinants for the WTP of each visitor (*Araújo 2022*). Research showed that adult tourists are more interested in learning about a new topic when they visit a place, elderly prefer to acquire knowledge about the place they are visiting, and teenagers and children are more interested in nature and wildlife (*Amit & Heshmati 2010*). The WTP will then depend on the value each person thinks the service brings them they receive and how satisfied they are while doing an activity.

Moreover, many studies demonstrate that the level of education is very important for the WTP, and that higher levels of education make the population aware of the environment they are living in and can often lead people to engage in sustainability easily. According to "The Intergovernmental Panel on Biodiversity and Ecosystem Services Global Assessment" (*Kok et al. 2017*), sustainability and the WTP for nature conservation is knowledge-related, which means the more informed people are about their environment and the importance of nature, the more they will be likely to pay for its conservation. Therefore, the level of income is an important factor to determine the WTP of visitors because the more income is earned, the more the tourists will be willing to pay as they are less or not sensitive to price variations than those who earned lower income (*Araújo 2022*).

The WTP for nature conservation also depends on the length of stay each person planned. Indeed, some surveys showed that the longer tourists stay in the same place, the more they will be willing to pay to visit as many places as possible, and the more they will be willing to pay a higher price. Also, as tourists pay taxes elsewhere, they will be more willing to pay for nature conservation in other countries because they won't see their taxes increasing unlike locals who already think their taxes are high enough. Moreover, paying for activities while traveling is included in their traveling budget which makes them more willing to pay (*Lawrence et al. 2020*).

To summarize, research in many countries, such as Austria, Finland, and Africa, about the WTP for nature conservation shows that tourists are more willing to pay depending most on their age, education, and income. In fact, the results demonstrate that awareness increases with age because older tourists are more informed of their environment and want to contribute to its conservation, and that awareness is a key determinant to increase the WTP. Thus, the differences of socioeconomic characteristics between every country and all areas must be considered to implement the best solutions that fit each country and areas.

#### III.III - What makes people not willing to pay for nature conservation?

Many studies also showed that a certain percentage of the respondents interviewed during the research were not willing to pay for nature conservation in National Park. Various reasons have been cited such as "nature conservation in national parks is the government responsibility" because the citizens pay enough taxes, most of them don't believe their money will be invested in nature conservation, and some of them think the fees are too expensive. Thus, to be willing to pay for nature conservation, visitors and citizens want to be informed about where their money goes and want to see positive changes as proof (Aseres & Sira 2020). Most people can't really imagine how their money can help for nature conservation because of the insufficient information they often receive. Most people visiting public natural areas are not used to the process of paying for nature conservation and its policy which make it difficult to understand the policy implemented. Again, education and the flow of information is the most important to make people understand how important they are for nature conservation. Therefore, it helps to increase their WTP by making them aware that it's not only the government's responsibility, but also all the community's responsibility to take care of the heritage of the country. As a matter of fact, they must be aware that using the paths of natural areas contributes to the destruction of ecosystems, the extinction of wildlife, the depletion of resources, and pollution, that have an impact on their environment and health5. To give an example, in Gelderland, the development of a new natural area succeeded by being mainly financed by private donors.

Nature as a government's responsibility is one of the reasons people are not willing to pay for nature conservation. However, regarding Veluwezoom National Park for example, big parts of the park are owned by private owners (*Hein 2011*). These private owners need to finance and invest in nature conservation to assure the maintenance of the area that will allow the visitors to keep using the paths for recreation. Visitors need to understand and be aware that the private owners need help to finance the maintenance of the park. However, the lack of information about the division of the lands of the park make it difficult to understand that private lands need financial help from citizens and visitors to maintain the area because it's not the government's propriety (*Tuni 2021*).

For people to be aware of nature conservation and who is responsible for it, some research showed that volunteering is a solution to educate people about sustainability and nature. Participating makes them aware of the importance of nature in their environment and the importance of their financial contributions to maintain public natural area. Moreover, volunteering is a good way for people to create a community by working and doing group activities in the areas. Indeed, volunteers are more aware and educated about nature and are more willing to pay for its conservation because they have a feeling of belonging and they have the opportunity and the power to participate in the decision-making and to make a change. Having these responsibilities and this collaboration help to increase the WTP for nature conservation (*Nuva et al. 2009*).

Despite the numerous literatures about the WTP for nature conservation, no specific solutions have been found. The need to focus on the visitors and the socio-economic factors is crucial to try to make them aware and make them understand the importance of nature and their financial contribution to conserve it. Moreover, it is important to make people understand what they need to be aware of because awareness of nature conservation is a broad concept. Awareness of nature conservation encompasses the importance of nature and the benefits it brings to people and society in general, its maintenance, and the importance of financial contributions of visitors to maintain the area and make the activities last in time. As a result, the first step is to make people understand the concept of awareness of nature conservation and to keep them informed about everything related to this concept and the actions that will be implemented to maintain nature.

<sup>&</sup>lt;sup>5</sup> https://www.conserve-energy-future.com/causes-and-effects-of-environmental-degradation.php

## IV - FINDINGS

In this chapter, we will present the results we found based on the interviews and surveys we conducted and analyzed. These results will help us to compare our findings with the literature review and interpret the results in order to understand the different factors that have an impact on the WTP for nature conservation in the Veluwezoom National Park.

#### IV.I - Descriptive statistics

Table 1. Overview of general demographic attributes of the 84 respondents.

		Sample size (N=84)
Gender (%)		
	Male	42%
	Female	58%
Highest level of education achieved (%)		
	Elementary	2%
	Highschool	21%
	Bachelor's degree	46%
	Master's degree/PhD	30%
yearly gross income (%)		
	Below Average	20%
	Average	23%
	Above average	51%
	*No information	6%
Living situation		
	In/on the Veluwezoom <1 km from the	6%
	Veluwezoom	10%
	1-5 km from Veluwezoom	10%
	>5 km from Veluwezoom	75%
Rural vs urban living		
	Rural area	7%
	Town/Village	38%
	City	55%
Visitation frequency past month		
	1-2 times	35%
	3-4 times	12%
	>5 times	20%
	<1 time	33%
Natuurmonumenten membership		
	Yes	55%
	No	44%
	I don't know	1%

The visitors of the Veluwezoom we surveyed during the end of February and beginning of march, tend to be mostly female (almost 60%) with a higher education (university of applied science or higher). The combined higher education groups amounted to 76% of all the people surveyed. Only 51% of the people registered an above average income, 23% had an average income and 20% had an income of below average.

75% of the people live further away than 5km and are more likely to come by car. More than half of the people surveyed live in cities, 38% lived in small towns or villages and only 7% live in rural areas. Most people also only sporadically visited the area, 33% were first time visitors, 35% only visited the area once or twice in the last month and the last 32% visited the area 3 or more times in the previous month. A bit more than half (55%) of the surveyed peopled also said that they are

already member of Natuurmonumenten. Most people surveyed (82%) come to the Veluwezoom to hike / walk and approximately a third of the visitors come for a bike ride.

#### IV.II - What's the willingness to pay for maintenance of the route network?

Regarding the WTP, as shown in the figure below, there is a downward trend present in the maximum amount that people are willing to pay. A quarter of the respondents refuse to pay outright, often stating that they are afraid of an entrance barrier for less wealthy people and that it should be a government task to maintain nature and to keep it open for everyone. There is a large group of people who would be willing to pay &2-&5 for a visit.

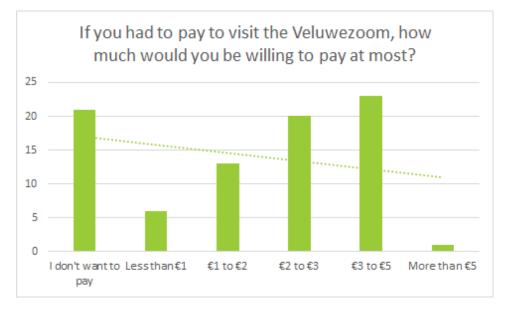


Figure 3. The number of people who would be willing to pay against the number of people who voted for this.

When looking at the attitude towards a hypothetical visitation fee, we see the same downward trend as with the maximum WTP price (figure 5). Sixteen respondents disagreed heavily with the statement given while none agreed fully with the statement. This result might be rooted in the same concerns the respondents already mentioned about nature conservation being a government's responsibility.



Figure 4. Willingness to pay for a visit to the Veluwezoom 0 is not willing to pay whatsoever, 10 is 100% willing to pay for visits to the Veluwezoom.

#### IV.III - What different factors affect visitors' willingness to pay?

#### IV.III.I - Residence area

An analysis was also performed on how residence area might impact people's WTP. As seen in the figure below, people from rural areas feel less inclined to donate money. The same can be seen when looking at people from semi-rural areas. Semi-rural areas encompass small towns and villages. There is a slight increase in WTP for people from urban areas, they are more inclined to donate compared to the other groups. Only the urban group had one respondent who was willing to pay more than  $\in 5$ .

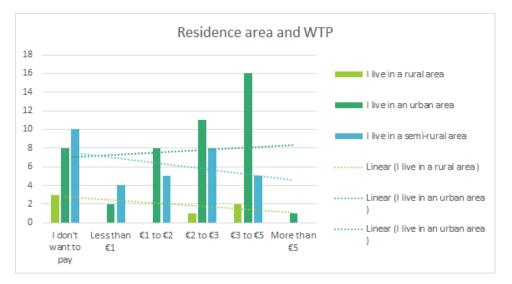


Figure 5. The amount people are willing to pay compared to their residence area (rural, semi-rural or urban).

#### IV.III.II- Natuurmonumenten membership

When looking at the differences in WTP between the Natuurmonumenten members and non-member groups, it can be seen that Natuurmonumenten members are willing to pay more compared to the non-members (figure 7).

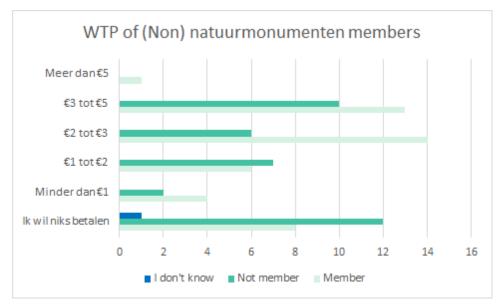
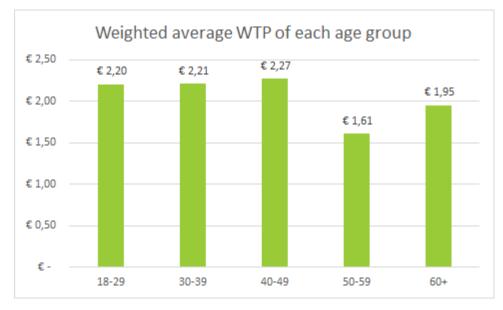


Figure 6. Amount of people per WTP category grouped by Natuurmonumenten membership status.

#### IV.III.III- Age groups

The differences of WTP over age groups was also analyzed. This was done by looking at the weighted averages of each age group in euros. In Figure 8, we can see that the oldest age groups are least



inclined to donate with significantly lower WTP averages compared to the younger age groups. This might have to do with the perception of people regarding who is responsible for the maintenance.

Figure 7. Weighted average WTP in euros per age group.

#### IV.III.IV- Level of education

Lastly, the effect of education level on WTP was analyzed, resulting in the following graph (fig 9). According to the graph, people with an elementary education have the highest average WTP, however this is deceptive because this education level only had 2 data points, thus resulting in a heavily skewed value. The fact that the highest education level also has the top average WTP was expected and supports our findings in literature.

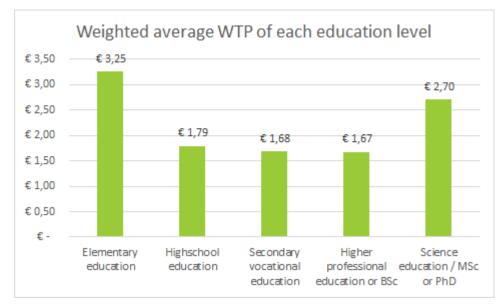
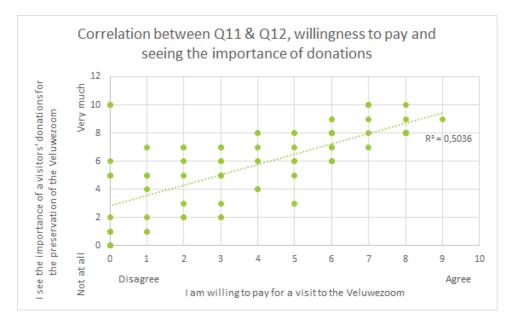


Figure 8. Weighted average WTP in euros for each education level.

#### IV.IV - (How) is willingness to pay related to visitor's awareness?

A positive correlation was found between WTP and whether people see the importance of donations for the management of the area. The  $R^2$  of 0,5036 means that we have found a slight correlation, a score of 1 would be perfect correlation and a score of 0,3 or lower shows no correlation. This supports the idea that informing people could increase WTP.



*Figure 9. Correlation between willingness to pay and seeing the importance of donations. Horizontally 0 means completely disagree, 10 means completely agree. Vertically, 0 means not at all, 10 means very much.* 

The survey also contained some questions to see the effect of framing on awareness and WTP. As shown in figure 11, awareness and WTP are somewhat correlated and could therefore be interlinked with each other.

First, the awareness of the respondents after reading the information poster was investigated. The general trend is a slight increase in awareness across all the different framing/poster groups. The management framing poster has the lowest increase, but also has the highest scoring respondent of all groups. The mixed group had the lowest average score and had the lowest scores and did not have a clear peak like the other groups. Emotional framing scored higher on the right side of the graph, showing the most increasing trend.

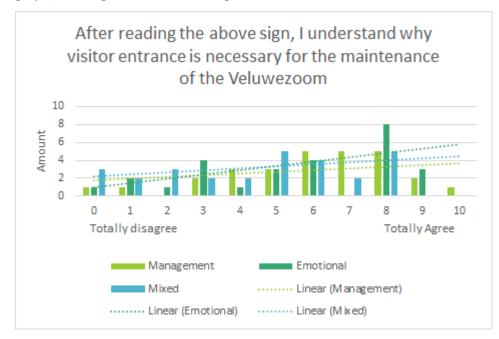


Figure 10. Respondent self-perceived a change in awareness after the poster grouped by framing type.

Secondly, the change in WTP after the information poster was analyzed. In the graph below, the change of the maximum WTP can be seen. The percentages WTP for each price class are plotted for each framing group before and after the poster. Noticeable is that the mixed group had an increase

in the  $\in 0$  price class. This means that people are less inclined to donate. However, there is also a large increase in the amount of people who were willing to pay  $\in$ 3 to  $\in$ 5. When calculating the average WTP for this group before and after the poster, we see a change of  $+ \in 1,83$ . This calculation was based on the percentages assuming a group of 84 people. That means that on average, visitors are more willina to pay for a donation after seeing the mixed poster. The emotional framing group saw a decrease in the amount of people who were willing to pay  $\in 0$ and an increase in people willing to pay  $\in$ 5 or more. In general, this group had some increases and decreases, but remains relatively stable with an average WTP difference of -€0,06 compared to before the information poster. The management framing group showed an increase in the  $\xi_3$ - $\xi_5$ category and the  $\in 1-\in 2$  category. The rest of the groups showed a decrease which resulted in an average WTP decrease of  $- \in 0.83$  for the management group. On average, all the groups combined showed an average WTP change of  $+ \in 0,31$ .

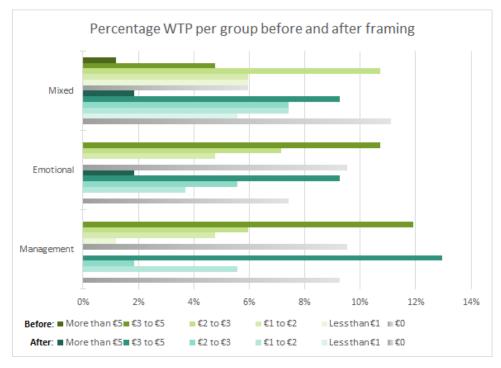


Figure 11. Willingness to pay before and after the poster grouped by framing type expressed in percentages of total responses.

We found that 48 out 84 respondents had a matching maximum price they were willing to pay before and after the information poster. 30 respondents did not fill in the second price, while 6 respondents showed a different price. This explains why we have 84 measurements for WTP before and only 54 measurements for WTP after. This difference between respondent numbers also explains the differences between the groups to some degree.

#### IV.V - How much can the alternative revenue stream generate?

Based on the WTP analysis, an estimation can be made about the average donation amount based on a weighted average. As a result, visitors are willing to donate is  $\in 2.02$  per person. The number of visitors to the Veluwezoom national park in 2022 is 1.7 million<sup>6</sup>. If the number of visitors remains constant, the potential value of the entrance fee could be approximately  $\in 3.53$  million. However, on average, the respondents would only pay 63,69% of their visits. Considering this percentage, we come to a value of approximately  $\notin 2.19$  million.

As an alternative revenue stream, we asked the respondents about their WTP for a parking spot per hour. A clear downward trend can be identified, which means that most people would rather have a low to no parking fee. When comparing the parking WTP and the other WTP analysis, it is noticeable that the parking WTP is more evenly distributed compared to the other. This coincides with the fact that many respondents saw a parking fee as an alternative way of raising funds. A weighted average

<sup>&</sup>lt;sup>6</sup> https://www.toerismevan.nl/visitor-data-monitor/

calculation shows an average parking fee of  $\leq 1,20$ . If all visitors arrive in full cars (five persons per car) and pay this average parking fee for an average visit of 2 hours, it will generate approximately  $\leq 816.000$  on a yearly basis.

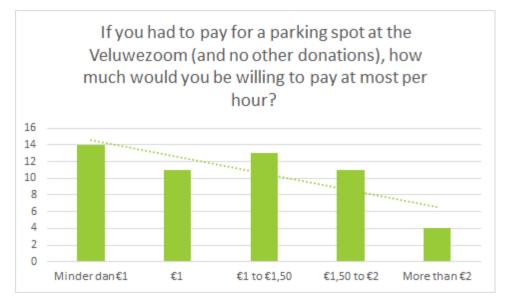


Figure 12. How much would people be willing to pay per hour for parking when there would not be an entrance fee? Dotted line represents the trend.

The preference between a QR code payment and a monthly subscription (such as Natuurmonumenten membership) was also tested. 55% of the respondents preferred a QR code over a monthly subscription. 25% preferred a monthly subscription and 20% had no preference. When looking at age groups and payment preference, we can see that the younger generations heavily prefer a QR code. However, the older generations also prefer (>50% of surveyed) QR codes over subscriptions. Only the age group of 50-59 did not prefer QR code and most of them had no preference.

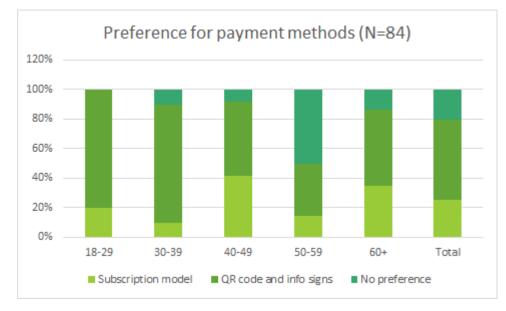


Figure 13. Percentage of preference for payment methods for each age class.

### **V - DISCUSSION**

#### V.I – Influence factors to visitors' WTP

Based on our results, most people would not be willing to pay to get into the park. Despite it being lower though, the percentage of people that are neutral on the matter or that would be willing to pay is still quite high. A big slice of our sample said they would not be willing to pay at all, but the number of people that agree to pay at least a very small amount is bigger, representing 75% of the total. Surprisingly, the biggest number of people said they would be willing to pay an amount of money between  $\in$ 3 and  $\in$ 5. This is an interesting result, given the fact that another national park that is located just 20km away from the Veluwezoom, the Hoge Veluwe, has an entrance fee of  $\in$ 12. Therefore, it might be useful for the purpose of this project to investigate the possible reasons why people are willing to pay quite a high entrance fee for that park, while they are not willing to pay at all or very little to get into the Veluwezoom. A hypothesis might be that some people go to the Veluwezoom specifically because it's free, and since we sampled the people only in Veluwezoom park and not in other places, it might be that most people that are part of our sample are people that disagree with entrance fee in national parks in general.

However, we found there are different factors that we say affected visitor's WTP. The most interesting factors according to our data are age group, residence area and Natuurmonumenten membership. According to our data analysis, there is a significant difference in WTP between people aged 18-49 and older people. There are several potential explanations for this finding. One possible explanation is that younger people may be more interested in new or innovative services and products and may therefore be more willing to pay for them. It is also possible that older people may be more conservative in their spending habits and may be more hesitant to pay for services or products that they perceive as unnecessary or a government's responsibility. Additionally, older people may have more experience with similar services or products and may be less likely to see the need for new or innovative offerings.

Besides this, our data shows a higher WTP in visitors living in urban areas compared to people that live in villages or rural areas. One hypothesis might be that people that come from rural and semirural areas come from nearby villages and are therefore catalogable as "locals". As discussed earlier, it has been taken into consideration the fact that local people might be less willing to pay because of the taxes they already pay. Another reason might also be related to the fact that people living in cities are less used to find themselves in forests or natural areas and therefore might appreciate it more, and accordingly more willing to pay for it. Unfortunately, it is not possible to give a certain explanation for these results as our data are not suitable for it. Our survey also included questions about the distance between the Veluwezoom and the visitor's residence, but the distance categories chosen don't give us enough information to get to a safe conclusion, therefore we can only discuss our own speculations.

Our surveys contained questions about the eventuality of the introduction of a parking fee. A big percentage of respondents stated that they wouldn't be willing to pay more than  $\in 2$ . This might be because we have mostly surveyed people who live further away from the Veluwezoom and are therefore dependent on the car to get to the area. They invest more to get to the Veluwezoom and are more likely to spend more time in the area because of that.

Lastly, we saw a difference between the WTP of Natuurmonumenten members and non-members. The national park Veluwezoom is owned by Natuurmonumenten, which complicates our research because members already pay a monthly membership fee. This might interfere with our efforts to measure people's WTP for donations. While the members already pay a membership fee, they still showed a higher WTP. This is curious and might be explained by the attitudes of the members towards nature. By being a member, they show that they feel more connected to nature or show more awareness regarding the importance of nature.

#### V.II – Awareness and visitors' WTP

Another important factor for WTP is awareness. We designed three types of information signs in the questionnaire to investigate the effects of different framing strategies on awareness generation. The results showed that emotionally framed signs with both management and emotional framing were the most effective at increasing awareness about the importance of the entrance fee. Conversely, emphasizing management practices does not raise more awareness (Figure 11). Next, we also checked the change in the amount of WTP after reading the information signs. Unlike awareness generation, emotional information and management information / framing did not increase the amount paid, while the only increase occurred after reading mixed information signs (Figure 12). This suggests that different information is needed to increase visitors' awareness and the amount

they are willing to pay. Raising visitors' awareness needs to motivate them more emotionally while providing them with more management information can make them willing to pay more.

We also found in Figure 10 that people with a higher awareness of donation are willing to pay more. Therefore, the ideal way to generate more income is to combine the two methods. Through more emotions and feelings, visitors can improve the awareness that they are important to route maintenance, and through management information to build trust between visitors and managers, a higher awareness of donation can be obtained.

What also stems from our data is that it looks like most people can see how important it is to donate for the maintenance of the park (59% of visitors gave a grade of 6 or higher on a scale from 1 to 10). This awareness does, according to our data, slightly positively influence visitors' WTP.

The awareness of the respondents was directly asked in the survey by asking how much they know about the management and goings on of the park. With a total of 58 people (69%) scoring their knowledge between 1 and 5, and only 26 people declaring to have a reasonable knowledge of the matter. Analyzing our data, we found a correlation of 0.5 between the answers of visitors to question 11 and 12 of the survey represented in figure 10. Even though the correlation is not particularly high, it's still interesting to see how people who are more aware are also more willing to pay, and it supports our thesis that increasing knowledge and awareness among the visitors will eventually bring to an increase of donations from them.

#### V.III Why visitors are not willing to pay

We found several reasons why people might have awareness and understanding regarding the management and importance of donations, but still are not in favor of visitor's donations. These reasons are concerned with the lack of uniformity in the region, values and beliefs regarding responsibility and accessibility, and the difference between being a tourist or resident visitor.

The Veluwezoom is owned by multiple different landowners, such as Natuurmonumenten, and these different owners all have different approaches towards the area and act differently: some arrange signs, some don't. This creates a lack of uniformity. If only a portion of the area is owned by a particular entity or individual (such as Natuurmonumenten), and they decide to put up signs in their section, any profits or benefits derived from those signs would likely only go to that specific owner, rather than being shared among all the owners. This could potentially lead to conflict or disagreement among the owners, as some may feel that they are not receiving their fair share of the benefits from the area. It may be necessary for the owners to come to a collective agreement or compromise on how the area should be managed to avoid disputes and ensure that everyone's interests are represented. Besides this, the lack of uniformity may confuse visitors as they do not know how and for what their money would be used by whom. This might in fact negatively affect visitors' WTP.

Linked to this 'unawareness' due to lack of uniformity in the region is the idea among many visitors that the government should be responsible for the conservation of natural areas, as also found in our literature review (literature reference). As nature areas are seen as public spaces, they are often viewed as owned by the state, while this is not the case for the Veluwezoom. There could be a possibility that people would be more willing to pay if they knew this area is privately owned and disclosed to the public. However, arguments against paying for a visit respondents gave us were also related to the idea that nature should be accessible for everyone, as it is again a public space where everyone has the right to be able to go to. This is an ongoing discussion.

Some of the people we have interviewed have noticed a different approach coming from the visitors to the park that live in the area compared to tourists. According to our respondents, inhabitants of the area consider the Veluwezoom park as their own neighborhood and they feel like they have the right to use it. Inhabitants of the area might also be less willing to donate money because they already pay taxes to their region, and they feel like part of these taxes should already be used for the maintenance of natural parks.

Linked to the tax system and the 'unawareness' due to lack of uniformity in the region, is the idea among many visitors that the government should be responsible for the conservation of natural areas, as also found in our literature review (*Aseres & Sira 2020*). As nature areas are seen as public spaces, they are often viewed as owned by the state, and not under citizen responsibility, while this is not the case for the Veluwezoom. There could be a possibility that people would be more willing to pay if they knew this area is privately owned and disclosed to the public. This might in fact negatively affect visitors' WTP. As mentioned by some of our respondents, visitors might feel like they need more information about the management of the area and where their money goes to.

However, arguments against paying for a visit respondents gave us were also related to the idea that nature should be accessible for everyone, as it is again a public space where everyone has the right to be able to go to, therefore voluntary donations would be the preferred method. Interesting is that people who hold these views would be willing to pay themselves if it was really needed but are against the idea of paying for nature itself, which relates to their values and beliefs regarding responsibility and accessibility of nature.

These ideas do relate to the ethical impact of visitor's donations, one concern is that the root cause for this problem is the government's subsidy policies bringing natural landowners into financial trouble, by underfunding the maintenance of nature areas. This leads to landowners searching for new alternative methods for gaining income from visitors. If this neo-liberal trend continues, the view of nature as a commodity will become a more common one. This could eventually lead to nature becoming a good/service that will exclude people with less spending power.

#### V.III – Potential value of visitors' payment

As presented in the results (Figure 4), the weighted average amount that visitors are willing to donate is  $\in 2.02$  per person and the entrance fee donation can potentially generate about  $\in 2.19$  million for a year. Route maintenance in the Veluwe area costs around  $\notin 2-\notin 4$  million a year, so the entrance might supplement a part of this expenditure. It should not be overlooked that when the national park changes from free to paid admission, the number of visitors may decrease. Half of the visitors indicated that they would visit less often when entrance fees became compulsory. However, if the entrance fee is a voluntary donation, 63.7% of visits are donated (Figure 5). If we want to guarantee a minimum extra income of  $\notin 2$  million, the number of visitors could not fall to less than 1,554,300 per year. Therefore, the number of visitors needs to be monitored to check whether there is a significant decrease in the number of visitors.

Even though visitor payments do increase revenue, they can also bring new costs. Management costs can increase, for example by setting up new information signs and donation websites, and by requiring additional staff to collect fees. In addition, opportunity costs need to be carefully considered. Visitors living nearby may turn to other free public parks, and the amount of money donated through other means (e.g., Natuurmonumenten membership fees) will be affected (*Mendes 2003*). Looking further, the allocation of visitor donations may become a new issue for management. Who should manage this additional income? If it is managed by Natuurmonumenten, then there is no guarantee that the money will be invested directly in road maintenance. But if it is managed by the Routebureau, then it is a challenge to collect donations from visitors. The large total mileage of the roads and the many different private territories they cross require managers to carefully consider where to set donation points.

In addition, some elderly visitors over the age of 70 indicated that they lacked knowledge of digital payments, while our results showed that QR codes were accepted by the majority (Figure 14). Considering the large proportion of elderly visitors to the park (Table 1), payment methods also need to be carefully considered. To deal with the problems, we formed recommendations in the next chapter.

#### V.IV – Limitations of our methodology

In Chapter 2, we described the ways in which the Veluwezoom National Park currently manages their income. In addition to government funds, Natuurmonumenten and Routebureau also generate income by cooperating with commercial companies, charging subscriptions, and receiving direct donations. Therefore, we first planned to interview different stakeholders to obtain their views on alternative income methods. During the first weeks we sent out multiple emails to local organizations to get in contact with visitors, such as cyclists and horse riders. However, we did not get many replies, which led us to focus mostly on surveying. We were not able to interview more than one visitor, and therefore weren't able to use an inductive approach for the survey. The contact channels to stakeholders are not very open, people rarely check their mailboxes or prefer to talk face-to-face.

Regarding our surveys, there are several circumstances which affected our data gathering and therefore created biases. Firstly, we were mostly able to reach 'tourists' with our surveys. These are people who live more than five kilometers from the Veluwezoom. This is probably because we were surveying in touristic spots, which inhabitants might more often skip. To overcome this bias, we distributed around 60 flyers to houses in Rheden, but this didn't have much effect on our tourist-inhabitant ratio.

Secondly, we were there during the spring school holiday during the week, which was positive as there were a lot of visitors. However, this also creates a bias as there were a lot of people with

children and elderly people. We expect that during the weekends we would also encounter other groups of people who do not have small children and normally work during the week.

Thirdly, there are also some considerations to be mentioned about the WTP and contingent valuation approach (CVA) we choose to use. Given the time and staffing constraints of the project, we chose to collect visitor data by assuming an entrance fee. Visitors could easily be substituted for this hypothesis as many other national parks have already adopted a similar approach (Reynisdottir et al. 2008). During the survey, we observed resistance to the survey from some visitors who were suspicious of the park's plans to start charging fees. The hypothetical scenario made most visitors feel safer and the information gathered was more reliable. However, the usage of a hypothetical WTP situation has some caveats to it. For respondents, to give their maximum WTP in a hypothetical situation, will not accurately reflect on how they would react to it if the situation were real. Therefore, we've added a question to ask whether the respondent would donate their WTP amount every time, or that they would not. They could also indicate the percentage of visits to which they would hypothetically donate. Based on the results, we estimated the potential value added by entrance fee in the next paragraphs. Nevertheless, the problem with the WTP still remains and should be considered while reading this report's recommendations<sup>7</sup>.

Finally, the results may be biased, and follow-up investigations need to expand the sample size. Because 30 people did not answer the WTP question that came after the information sign. This meant that we could only compare the WTP of the 53 respondents before and after the information signs.

<sup>&</sup>lt;sup>7</sup> https://www.hogeveluwe.nl/

# VI - RECOMMENDATIONS

In this part, we will present our recommendations for our commissioner. Our recommendations are more focused on the increase of the awareness of the visitors and citizens in order to have a positive impact on their WTP. Indeed, based on our research methods, education and awareness are two important factors that have a positive effect on the WTP of people. Moreover, most of the visitors to the park are not aware of the management activities of the park and the impact the numerous visits can have on nature.

1. Putting a big board with information (information sign) and a QR code in the busiest places in the park.

The first recommendation we would give to the Veluwezoom National Park is to put a big billboard at the entrance of the park around the most crowded spaces, such as next to the Posbank or visitors' center for example. The boards will show the important information about the park, the animal and vegetal species that live in the park. They will also show explanations to people how they can contribute to the conservation of nature. Adding to that, when scanning the QR code, visitors will have access to a range of information about the park, the maintenance of the park and its costs (what has been done and what still has to be done), how much money these costs represent and where the money goes towards and the importance of their donations to help the maintenance. Moreover, the range of information will be available for the visitors and will increase their awareness of nature and the National Park. For example, the visitors will be aware of the division of the park between private owners and municipalities or what the maintenance management is about and what its role is. As a result, they will be more informed and aware of their environment and the role they can play in contributing to the conservation of the park. This information should be presented in an attractive and simple manner. Using colors and pictures with broad information will for example facilitate the understanding of the visitors and help them to focus on the message we are trying to send them. According to our survey, QR codes are very appreciated by younger and older visitors which can facilitate the efficiency of spreading information as much as possible.

2. Installing boxes next to each QR code board that will be dedicated to cash method donations.

These boxes could be put in some places in the park, especially next to the big boards as mentioned in the first recommendation. Boxes for donations are an easy way for people to participate directly and easily in the maintenance of the park. By putting them next to the billboards, visitors will have access to the information and could directly act by giving a contribution. However our survey indicates that elderly people would like to use a QR code to donate money, 65+ respondents also mentioned they would prefer to pay in cash. They will have access to these boxes in which a small explanation will be displayed to make sure they understand what the boxes are made for, in addition to the information on the billboards.

3. Increasing education about the Veluwezoom National Park and the importance of nature through the newsletter/social media and email which visitors can subscribe to.

As we've seen before, education and awareness is one of the most important factors that lead people to pay for nature conservation. By being available on their devices through their mailbox, the information will be constantly accessible at any time and even at home. Thus, it will contribute to their education about nature conservation, the importance of the maintenance of the park, and how their donations are used to improve the NP. Indeed, the emails received will contain information about the management activities of the Veluwezoom in order to show people why and how their contributions help. To do so, the information shared will be based on management facts but also emotional information to optimize the WTP of visitors (emails with information about the management, and then thankful emails, congratulations emails). Triggering the emotions and feelings of the recipients is a good way to make them focus on what they are seeing and reading (using colors, foster inspiration, telling stories, etc.). As a result, they will be more likely to focus on the content we give them that will increase their awareness and then, their WTP.

<sup>4.</sup> Improving uniformity in the management of the Veluwezoom park.

There is a lot of confusion about who owns the park and who has to maintain it. During both the interviews and the surveys, some people said they think either the park is completely owned by Natuurmonumenten or the government. Others are confused not about who owns it but who is and should pay for the maintenance. Due to the fractured ownership of the park people are less willing to donate because they are unsure where the money goes to or what it will be used for. By putting the entire park under one management, this problem should be alleviated. One a sidenote, this will also lead to save money from different (volunteer) groups (local businesses, NGO, etc.) who work in the Veluwezoom who have the same end goal but do not see that allowing more money to go towards another group also benefits them.

# **VII- CONCLUSIONS**

In conclusion, it is shown by our results that by getting all (or most) visitors to donate a small amount of money to the park, the yearly budget gap could be reduced and even filled quite easily. To get people to do that though, the level of awareness and education of the visitors needs to be improved, since our study presents evidence that there is a positive relationship between awareness and WTP for the maintenance of a natural area. We have also seen that many demographic attributes might have an impact on someone's WTP and that framing can influence someone's WTP. A side note is that the results are based on a hypothetical situation, which might not accurately represent or predict people's actions if the situation was to be real.

Another important point that emerged from our study is the necessity to increase cohesion between stakeholders and uniformity in the management of the area. This finding has important implications for the managing organization, which is strongly advised to improve the awareness spreading system. By increasing awareness about the importance of natural areas and how they are managed, it may be possible to increase public support for the maintenance and conservation of these areas and therefore the income of the park. By doing so, we can better protect these important ecosystems for future generations and assure safety and high-quality experience for the visitors.

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# APPENDICES

#### Appendix 1. Protocol of interviews

#### Before:

Who is being interviewed? What group/organisation does the interviewee belong to? What is the goal for the interview? What do we want to know from the interview? Topic list

#### During:

- 1. Introduce ourselves
- 2. Explain our project:
  - a. The problem -> gap in the maintenance budget
  - b. The project -> what we are going to do
  - c. Why we interview stakeholder & expectations?
- 3. Introduction stakeholder
- 4. Discussion about tourist infrastructure maintenance (questions\* when needed) **Businesss** 
  - a. What do they do?
  - b. For who do they do it?
  - c. Does the tourist infrastructure benefit your business/organization?

d. What is your and your guests/customers awareness regarding maintenance cost of infrastructure?

e. Do you think your customers/guests are willing to pay for maintenance costs?

- f. What crowd sourcing campaign can be the most effective according to you?
- g. Would you actively promote crowd sourcing campaigns for maintenance costs?

#### Person

a. Why visit the area?

b. Perception of Nature (leefstijlen) (wat betekent, wat doe je, hoe vaak, betrokken?)

- c. Attitudes towards payment for nature maintenance
- d. Awareness of Nature management & maintenance

e. If there is any place, what place do visitors take in this discourse? (passive/receiving, active/paying, involved/volunteering)

f. Changed attitudes towards payment for nature maintenance?

g. what is the best method for receiving payment (what do you think is important, what resonates, what makes you more willing to pay?)

h. Awareness about maintenance cost, attitudes, how to ect.?

**Municipality:** Is the municipality involved in maintenance of tourism infrastructure?

Discussion about tourist infrastructure maintenance (questions\* when needed) **Closing remarks,** thanking our stakeholder

\* Question examples:

ORGANISATION

How does your business/organization relate to the tourism infrastructure?

What is the desired state of the infrastructure for you?

What is your attitude towards a crowd source campaign for maintenance costs?

#### Appendix 2. Summary of interviews

**Interview Routebeheer**: The Veluwe has a revenue of 5 million euros, but the situation is very complex. There are many different parties with different interests. Different workgroups only see what they do themselves and are reluctant to give up funds towards other workgroups even though it would also benefit them. This fracturing of interests is a big problem because the uniformity is gone, which is important for visitors' willingness to pay. Unity should be guaranteed because now people do not know what they donate to should they do so. On the Veluwezoom there are many differences in signs for example because one of the stakeholders (natuurmonumenten) wants to arrange it themselves. The main issue with visitor donations is where does the money go? There are many different stakeholders who all want a part of this money but how should it be divided? There is a set-up for this in the form of a fund but this project is on hold at the moment.

Interview Peter: People who live close to the Veluwezoom see the area as "theirs". They love coming to the area and seeing why other people from other parts of the country or even other countries would also like to go there and experience nature. But they also see that nature is under pressure, there are almost no paths to walk anymore where you can avoid other people. But, understandably, many people want to visit the area. Visitors also tend to go off a route more than they did years ago. People want a sense of adventure and the advances in camping equipment have made this a lot easier (lightweight tents, very well-insulated sleeping bags). It is also promoted on social media that having an adventure is something to strive towards. The people who do this know that they are doing something unlawful but are willing the risk to see the wildlife. Also, the enforcement of the laws in the park is very difficult due to its large size. Two different national parks in the same country 30km apart have different laws which are not understandable for many visitors. Also, the lack of a required parking fee is weird for tourists but not for people who already support natuurmonumenten since they already pay the organization whose land it is. People who live nearby are mad when natuurmonumenten close down certain areas and paths. Opening areas only for nearby residents is not done. People feel like they already pay taxes on which part goes towards nature conservation so why pay fees to enter the park? I suggest overall management for all the national parks in the Netherlands with one overall entry subscription fee. Since most borders in the area are unknowable as in who owns which part and there are many different owners. Therefore, how are you going to divide the entrance fee if you would have one? There are about 16 different CEOs, it is impossible to convince 15 of them to give up their job. Nowadays, a lot of money is lost through meaningless details because of all the different area managers. People who want something back for their subscription would be less interested in paying for just the maintenance. Companies already have to pay every NGO to use the area, why don't people? An entrance fee should be an option but nobody wants a fence around the area therefore this is difficult to enforce.

**Interview Buitenplaats Beekhuizen**: Peace and quiet are important for our business model, with the new plans for the area this is enhanced but maybe less spontaneous visitors due to parking fees. The biggest issue I see with visitor donations is that there is almost no awareness about the costs of the infrastructure and if this is a governmental task or that it should be paid by the owning party. people who visit the buitenplaats already feel that they pay more than enough since the camping is in a higher segment of luxury and costs.

#### The main takeaway:

The main issue which is apparent in all the different interviews is the lack of cohesion in the area. Visitors are confused about the ownership of the area, is it the government, individual owners or larger NGOs? the stakeholders themselves are also all trying to their piece of the donations and the division of donations between the parties is therefore also very difficult. This is also true for the entire Veluwe area in general. Not 30km there is a national park for which you have to pay an entrance fee already. Visitors do not see the difference between the areas and where one owner's land ends and another begins, this also leads to confusion about where their donation is going and where and to who to donate. There is also a lack of awareness about the costs of maintaining the park and who is responsible for this. Many people think it is the government to whom they already pay taxes and are therefore reluctant to donate.

### Appendix 3. The questionnaires used for survey (Dutch and English)

#### Vragenlijst Nederlands

#### Project

Deze vragenlijst is onderdeel van een onderzoek naar de bereidheid van bezoekers van de Veluwezoom om entree te betalen wanneer ze het gebied bezoeken. Dit onderzoek wordt uitgevoerd door studenten van Wageningen University in opdracht van Toerisme Veluwe Arnhem Nijmegen.

Dit is een oriënterend onderzoek met hypothetische vragen met betrekking tot bezoekersentree, wat niet betekent dat er op dit moment entree betaald moet worden of dat dit in de toekomst ook echt geïmplementeerd zal worden.

#### Eindproduct

Met de data van deze vragenlijst wordt een adviesrapport opgesteld voor de organisatie Toerisme Veluwe Arnhem Nijmegen

#### Anonimiteit

De vragenlijst wordt volledig anoniem ingevuld, waarna de gegevens anoniem opgeslagen en bewaard worden conform de algemene richtlijnen van de Wageningen University & Research Informatiebeveiliging - WUR

#### Contactgegevens

Student Wageningen University:

Vera de Regt

vera.deregt@wur.nl

Door aan deze survey deel te nemen geeft u toestemming voor het gebruik van uw anonieme persoonsgegevens zoals hierboven vermeld.

Bedankt voor uw deelname!

Vul de vragen in door het hokje aan te vinken of het cijfer te omcirkelen. Gelieve één antwoord per vraag, tenzij anders aangegeven.

1. In welke leeftijdscategorie bevindt u zich?

- □ 18 29
- □ 30 39
- □ 40 49
- □ 50 59
- □ 60 +

2. Wat is uw gender?

- 🗆 Man
- □ Vrouw
- □ Non-binair
- □ Anders
- 3. Wat is uw hoogst genoten onderwijs?
- □ Basisonderwijs
- □ Middelbaar onderwijs
- □ Middelbaar beroepsonderwijs
- □ Hoger beroepsonderwijs of BSc
- □ Wetenschappelijk onderwijs / MSc of PhD

4. Hoe ziet u uw inkomenssituatie? (Modaal = ~30.000)

□ Onder modaal

🗆 Modaal

 $\Box$  Boven modaal

5. Welk van de volgende uitspraken past het beste bij uw huidige woonsituatie?

 $\Box$  Ik woon in of direct tegen een Veluwezoom aan

□ Ik woon vlak bij de Veluwezoom (maximaal 1 kilometer van het bos vandaan)

□ Veluwezoom is niet al te ver weg (tussen de 1 en 5 kilometer)

□ Ik woon meer dan 5 kilometer van de Veluwezoom af

6. Welk van de volgende uitspraken past het beste bij uw huidige woonsituatie?

 $\Box$  Ik woon in de stad

 $\Box$  Ik woon in een dorp

□ Ik woon buiten een stad of dorp

7. Hoe vaak heeft u de Veluwezoom bezocht afgelopen maand?

🗆 Niet één keer

🗆 1 tot 2 keer

🗆 3 tot 4 keer

□ Meer dan 4 keer

8. Bent u lid van de organisatie Natuurmonumenten?

🗆 Ja

□ Nee

□ Weet ik niet

9. Wanneer u de Veluwezoom bezoekt, welke van de volgende activiteiten onderneemt u? *Er zijn meerdere antwoorden mogelijk.* 

□ Wandelen

🗆 Fietsen

 $\Box$  Mountainbike

🗆 Paardrijden

□ Photography/ wild spotting

□ Hardlopen

□ Meditatie

 $\Box$  Anders

.....

10. In welke van de stellingen herkent u zich het meest? Kies maximaal 3 antwoorden.

#### Als ik de natuur bezoek ben ik opzoek naar...

□ ... een gevoel van avontuur, inspiratie en nieuwe ervaringen, het liefst alleen of in een klein gezelschap

 $\Box$  ... activiteit en belevenis in een gebied waar veel te doen is, het liefst met een groep anderen

 $\Box$  ... plezier, gezelligheid en recreatie, het liefst met een groepje anderen

 $\Box$  ... ontspanning en een balans tussen dingen ondernemen en rustig aan doen, het liefst met vrienden of familie

□ ...rust, stilte, gezelligheid en tijd voor elkaar in 'echte' natuur, ik zoek graag de verbinding met de natuur of met de mensen om mij heen

 $\Box$  ... rust, stilte en geen gedoe, het liefst alleen of met iemand anders

□ ... bezinning en zelfontwikkeling in rust en stilte en doe ik waar ik zelf zin in heb op dat moment, het liefst alleen of met iemand anders

11. Ik ben bereid om te betalen voor een bezoek aan de Veluwezoom

Oneens <u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u> Eens							
Ligt uw keuze bij de vorige vraag toe.											
12. Ik zie het belang van een bezoekers donatie voor het behoud van de Veluwezoom											
<b>Oneens</b> <u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u> Eens							
13. Heeft u kennis over het beheer en management van het Veluwezoom gebied?											
Helemaal geer	1 <u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	5 Heel veel						
<ul> <li>14. Als u zou moeten betalen voor een bezoek aan de Veluwezoom, hoe veel zou u dan bereid zijn om maximaal te betalen?</li> <li>□ €0</li> <li>□ €1</li> <li>□ €1 tot €2</li> <li>□ €2 tot €3</li> <li>□ €3 tot €5</li> <li>□ Meer dan €5</li> <li>15. Als u zou moeten betalen voor een parkeerplek bij de Veluwezoom (en geen entree betaalt),</li> </ul>											
<ul> <li>IS. Als u zou moeten betalen voor een parkeerplek bij de veluwezoom (en geen entree betaalt), hoeveel zou u dan bereid zijn om maximaal per uur te betalen?</li> <li>☐ Minder dan €1</li> <li>☐ €1</li> <li>☐ €1 tot €1,50</li> <li>☐ €1,50 tot €2</li> <li>☐ Meer dan €2</li> </ul>											
Informatiebor	den										
<ul> <li>16. Is uw bereidheid om te betalen voor een donatie voor de Veluwezoom veranderd na het lezen van dit informatiebord?</li> <li>Ja</li> <li>Nee</li> <li>Weet ik niet</li> </ul>											
Ligt uw keuze bij de vorige vraag toe											

17. Zo ja, hoe veel zou u dan bereid zijn om maximaal te betalen na het lezen van deze informatie? Alleen invullen als bij 16 'ja' ingevuld is.  $\Box \in 0$   $\Box \in 1$  $\Box \in 1 \text{ tot } \in 2$  $\Box \in 2 \text{ tot } \in 3$  $\Box \in 3 \text{ tot } \in 5$  $\Box \text{ Meer dan } \in 5$ 

18. Na het lezen van het bovenstaande bord begrijp ik waarom bezoekersentree nodig is voor het behoud van de Veluwezoom

Oneens <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> Eens

19. Zou u de Veluwezoom met dezelfde frequentie blijven bezoeken als een bezoekersdonatie "verplicht" zou zijn?

🗆 Ja

□ Nee, minder vaak

□ Nee, vaker

20. Zou u bij elk bezoek betalen wanneer de bezoekersdonatie vrijwillig is (volgens de door u opgegeven prijs in vraag 17)

🗆 Ja

🗆 Nee

21. Bij hoeveel procent van uw bezoeken zou u de vrijwillige bezoekersdonatie willen betalen?

.....%

22. Welke donatiemethode spreekt u aan? (meerdere antwoorden mogelijk)

□ QR-code en informatiebord bij de entree

Een maandelijks of jaarlijks abonnement

23. Welke andere donatiemethoden zouden u aanspreken?

#### Survey English

#### Project

This questionnaire is part of a research into the willingness of visitors to the Veluwezoom to pay an entrance donation when visiting the area. This research is conducted by students of Wageningen University on behalf of Tourism Veluwe Arnhem Nijmegen.

This is an exploratory study with hypothetical questions regarding visitor entrance fees, which does not mean that entrance fees are currently payable or that they will actually be implemented in the future.

#### **Final Product**

With the data from this questionnaire an advisory report will be prepared for the organization Toerisme Veluwe Arnhem Nijmegen

#### Anonymity

The questionnaire will be completed completely anonymously, after which the data will be stored and saved anonymously in accordance with the general guidelines of Wageningen University & Research Information Security - WUR

#### **Contact details**

Student Wageningen University:

Vera de Regt

vera.deregt@wur.nl

By participating in this survey, you consent to the use of your anonymous personal data as stated above.

Thank you for participating!

*Please fill in one of the options by ticking the box or circling the number. Only one box needs to be ticked unless specified otherwise.* 

1. What is your age?

□18 – 29

□ 30 - 39

□ 40 - 49

□ 50 - 59

□ 60+

2. What is your gender?

🗆 Male

Female

□ Non-binary

 $\Box$  Other

3. What is the highest level of education you have completed?

□ Below high school

□ High school

□ Bachelor's Degree

□ Master's degree or PhD

4. What do you consider your annual household income status is? (Average = ~ 30.000)

□ Below Average

□ Average

□ Above average

5. Which of the following statements best describe your current residence area?

□ I live in/directly next to the Veluwezoom

□ I live near the Veluwezoom (maximum 1 kilometre from the forest)

□ The Veluwezoom is not too far from my home (between 1 kilometre to 5 kilometres)

□ I live far from the Veluwezoom (The nearest forest is more than 5 kilometres away)

6. Which of the following statements best describes your current residence area?

 $\Box$  I live in an urban area

□ I live in a semi-rural area

□ I live in a rural area

7. How often did you visit the Veluwezoom in the last month?

□ Not once

 $\Box$  1 to 2 times

🗆 3 to 4 times

□ More than 4 times

8. Are you a member of Natuurmonumenten?

🗆 Yes

🗆 No

□ I don't know

9. When you visit the Veluwezoom, which of the following activies do you undertake? *Multiple answers are possible.* 

□ Hiking

□ Biking

□ Mountainbiking

□ Photography / wild spotting

□ Horseback riding

 $\Box$  Meditation

□ Hardlopen

□ Other:

.....

10. Which of the statements do you most identify with? Please select max. 3

#### When I visit nature I am looking for ....

□ ... a sense of adventure, inspiration and new experiences, preferably alone or in a small group

□ ... activity and experience in an area with lots to do, preferably with a group of others

 $\Box$  ... fun, sociability and recreation, preferably with a group of others

 $\Box$  ... relaxation and a balance between doing things and taking it easy, preferably with friends or family

 $\Box$  ...peace, quiet, sociability and time for each other in "real" nature, preferably together with someone else

 $\hfill\square$  ... peace, quiet and no fuss, preferably alone or with someone else

 $\Box$  ... contemplation and self-development in peace and quiet and do what I feel like at that moment, preferably alone or with someone else

11. I am willing to pay for a visit to the Veluwezoom Disagree 1 2 3 4 5 Agree Please elaborate on your choice: 12. I see the importance of a visitors' donations for the preservation of the Veluwezoom Disagree <u>1</u> 2 <u>3</u> 4 5 Agree 13. Do you have knowledge about the management and management of the Veluwezoom area? Not at all 1 2 <u>3</u> <u>4</u> 5 Very much 14. If you had to pay to visit the Veluwezoom, how much would you be willing to pay at most? □0 □€1 □ €1 to €2 □ €2 to €3 □ €3 to €5 □ More than €5 15. If you had to pay for a parking spot at the Veluwezoom (and no entrance donation), how much would you be willing to pay at most per hour? □ Less than €1 □€1 □ €1 to €1,50 □ €1,50 to €2 □ More than €2 **Information bords** 16. Has your willingness to pay for entrance to the Veluwezoom changed after reading this information board? □ Yes □ No □ Do not know Please elaborate on your choice: ..... 17. If yes, how much would you be willing to pay at most after reading this information? fill in only if 'yes' is filled in at question 16 0 🗆 □€1

 $\Box \in 1 \text{ to } \in 2$  $\Box \in 2 \text{ to } \in 3$  $\Box \in 3 \text{ to } \in 5$  $\Box \text{ More than } \in 5$ 

18. After reading the above sign, I understand why visitor entrance is necessary for the preservation of the Veluwezoom

**Disagree** <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> **Agree** 

□ No, less often

 $\Box$  No, more often

20. Would you pay at each visit when the visitor donation is voluntary (according to the price you provided in question 17)

□ yes

🗆 no

21. On what percent of your visits would you pay for the voluntary visitor donation?

....%

22. Which payment method appeals to you? (multiple answers possible)

 $\hfill\square$  QR code and information board at the entrance

 $\Box$  A monthly or annual subscription

What other methods to pay would be preferable according to you?

.....

Flyers of the survey

# Vul onze enquête in over DE VELUWEZOOM



Een studenten onderzoek naar recreatie op de veluwezoom. +-5 minuten

#### Appendix 4. Three types of information signs

All information signs are presented below. The upper three signs are in Dutch and the others below are in English. From the left to the right order, they are direct management information, indirect emotional information and mixed information. An overall example of sign also given (Mixed information in English).





# Help Your Recreation

Did you know that nature also needs to be maintained?

# **THINGS YOU CAN DO:**

A voluntary donation helps us maintain our beautiful nature reserve so that you can enjoy the Veluwe to the fullest on foot or by bike.



Due to the increasing recreational pressure in our area, we are finding it increasingly difficult to guarantee the best nature experience. Your donation would help us better maintain this area.

. . . .

Via the QR code above you can donate voluntarily and contribute to the maintenance of this beautiful part of the Veluwe.

Get to know more information on how to support our nature management at www.reallygreatsite.com