

Exploring the similarities between residents' and national park's ambitions for the Utrechtse Heuvelrug



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Introduction

The Utrechtse Heuvelrug is one of the biggest national forests within the Netherlands, covering about 20,000 hectares (*Nationaal Park Utrechtse Heuvelrug*, n.d.). It is situated in the province of Utrecht and is the centerpoint of several municipalities; along with having a township, 7 different municipalities surround the area (*Dorpen*, n.d.). The Utrechtse Heuvelrug area is well known for its vast diversity of flora and fauna and is inhabited by about 50,000 residents (*Regionale Kerncijfers Nederland: Utrecht*, 2021). The Park also offers a variety of activities, such as mountain biking, hiking, as well as countless other recreational and cultural experiences. However, there is also a substantial portion of the area that serves as an area of conservation; the forest management focuses both on recreational activities as well as conservation and the protection of the forest. Within this study, management of the forest and the Ambitions set by the National Park Utrechtse Heuvelrug are explored. However, there will also be a focus placed on the perception of the residents on ecosystem services and the Ambitions posed by the park.

When defining the "functionality of the forest", emphasis is placed on both regulating/supporting ecosystem services and cultural services. The knowledge that residents have about the forests, as well as their beliefs about them, can play a role in creating effective policies around the subject of management and overall forest planning by creating inspiration and input in the mind of the management team (Hu and Ritchie, 1993; De Meo et al., 2015). Therefore, these perceptions should be considered for the managerial policy planning amongst both recreational and conservational activities (Chen et al., 2018). In the past, a vast number of studies have been done on the perception and preferences of residents on forest management, as well as the value that they place upon the services, and they have shown to significantly inform policy- and decision-makers (Huang, 2014; Dhami et al., 2014). In this case, the focus is on the Ambitions that the Park themselves have represented on their official website.

Therefore, the main research question that will be elaborated on is: *To what extent do the Ambitions of the National Park Utrechtse Heuvelrug represent the opinions of the residents about the functionality of the forest?*

To further aid with the conclusion of our main research questions, three sub-questions were developed:

1. *Which ecosystem services that are offered by the Utrechtse Heuvelrug do residents consider most important?*
2. *Which recreational aspect(s) that visitors can participate in do the residents consider most important?*
3. *Which of the National Park Utrechtse Heuvelrug's six Ambitions do the residents consider most important?*

These sub-questions will be referenced in the survey and will be analysed in the discussion to further complement and support the conclusion. It has been decided to look at not only the Ambitions themselves but also what they represent in terms of recreation and ecosystem services. The subquestions play a significant role in determining whether the residents' perspective is implemented in the development and further implementation of these Ambitions, as the residents are important stakeholders to the park itself. By pinpointing this study within the Utrechtse Heuvelrug area, the aim is to collect the perceptions and opinions of residents, analyse them, and inform the governing bodies such as the Stichting Nationaal Park Utrechtse Heuvelrug, Staatsbosbeheer, and Hoogheemraadschap De Stichtse Rijnlanden (HDSR). This information will then be able to give a better insight into the perceptions of the residents around the Utrechtse Heuvelrug so that the National Park can continue to cater to the views of the residents.

Literature review

Literature from other, comparable studies is incredibly important when creating a research framework and setting up the main research plan. Furthermore, context about the research topic, the location and the current way of management are essential to consider as well. Within this section of the report, the most relevant information about the Utrechtse Heuvelrug and its residents will be discussed and analysed.

Within the Utrechtse Heuvelrug, there are a large number of areas that serve as cultural and historic landmarks, containing museums, castles, and monuments. However, the southern part of the Utrechtse Heuvelrug, which covers roughly half of the entire forest, is part of the Utrechtse Heuvelrug National Park and was based on a "Management and Development Plan" drawn up jointly by the parties involved. The stakeholders include: Staatsbosbeheer, 'Utrechts Landschap', the Society for Preservation of Nature Monuments in the Netherlands, Recreatie Midden-Nederland, the municipalities of Utrechtse Heuvelrug, Rhenen, Zeist, Leusden, and Woudenberg the estate of Den Treek-Henschoten, and the ministry of defense (Arnouts, 2010). It was a great challenge to unite all these stakeholders, however, it was generally agreed upon that more emphasis was needed on forest and heathland conservation and addressing the fragmentation of forested areas through fences and highways (Bussink, 2004). Because the forest is managed by such a variety of stakeholders, different opinions and visions have to be taken into account. To ensure that all parties have a clear overview of the current policies, goals and Ambitions for the future, the National Park Utrecht Heuvelrug has created an agenda covering the most important aspects (Jan Oosterman, 2018). This agenda contains six main Ambitions for the future:

1. Nature, landscape and cultural history: management and development.
2. Increasing perception and accessibility: focus on quality route structures, recognisability and image, education programs and appropriate recreational facilities.
3. Supervision and enforcement: effective and efficient.
4. Strengthening the brand: develop the Heuvelrug National Park into a strong brand that attracts businesses, institutions and residents. A brand that is visible in communications and publicity, but is also experienced at the entrances to the park.
5. Growing economic base for nature, landscape and heritage: managing and strengthening nature and heritage costs (much) more than the various partners currently receive. Focus on building a community of people who care about the National Park and who want to support it jointly, also financially.
6. Unique National Park: Working together to expand the boundaries and strengthen the unique values of the Heuvelrug National Park, and gain national recognition for this.

However, it is unclear to what extent the residents agree with these Ambitions. By researching their opinions on forest management, knowledge gaps can be identified and Ambitions can be adapted to make sure the forest reaches its highest potential for all parties involved.

To perform a study that considers the multiple different aspects the forest provides, an analytical framework based on the six Ambitions was developed. As can be seen in Table 1, the Ambitions have been divided into two categories: recreational Ambitions and ecological Ambitions. These two categories were chosen because it is believed that all values of the forest are either connected to the economy and the recreational sector or nature and ecosystems (ecological). Based on how important these categories are considered by the residents, the main research question can be answered.

Recreational ambitions	Ecological ambitions
1.1 Cultural history management and development: management, development, and preservation of cultural buildings and monuments	1.2 Nature and landscape management and development (ecosystem services): looking out for invasive species, plant diseases, dead trees, animal populations, etc.
2. Increasing perception and accessibility: focus on quality route structures, recognizability and image, education programs and appropriate recreational facilities.	-
-	3 supervision and enforcement considering landscape and forest management (no litter, dogs on leashes, staying on paths): effective and efficient.
4. Strengthening the brand: develop the Heuvelrug National Park into a strong brand that attracts businesses, institutions and residents. A brand that is visible in communications and publicity, but is also experienced at the entrances to the park.	-
5.1 Growing economic base for heritage: managing and strengthening heritage costs (much) more than the various partners currently receive. Focus on building a community of people who care about the National Park and who want to support it jointly, also financially.	5.2 Growing economic base for nature and landscape: managing and strengthening nature costs (much) more than the various partners currently receive. Focus on building a community of people who care about the National Park and who want to support it jointly, also financially
6.1 Unique National Park: Working together to expand the boundaries and strengthen the unique values of the Heuvelrug National Park, and gain national recognition for this (unique recreational activities).	6.2 Unique National Park: Working together to expand the boundaries and strengthen the unique values of the Heuvelrug National Park, and gain national recognition for this (unique landscape and unique trees/animals).

Table 1: The ambitions of the Utrechtse Heuvelrug and their explanations

To collect data on the opinions of many different people in one certain area, surveys need to be developed and sent out. An example of a study that has done similar research concerning residents' opinions about forest management is from Nepal. Scientists have created a survey (Omkar Joshi, 2018) that takes multiple different functions of the forest and their perceived importance into account. Respondents were asked to look at two different functions at a type and then compare them through a Likert scale from 1 to 7 (1 = "Equally Important," 3 = "Moderately Important," 5 = "Important," and 7 = "Very Important"). These comparisons were carried out in different categories to gain a broader understanding of every aspect the forest provides. These categories included weakness, opportunity, strengths and threats (SWAT-framework). The questionnaire was sent to multiple stakeholders by email.

Another research also used categories within a survey, namely: recreational resources, recreational perception, recreational facilities, and personal information (ZHANG Kaixuan, 2020). This study distinguished between the two main functions of a forest: the psychological value (including the importance of social interaction, education, cultural values, etc) and the physical value (including the importance of exercise and outdoor recreational activities). Questions were asked like: "how do you feel about [function]?" The participants could then rate the importance of different functions of a 5-point Likert scale (1=not important, 5= very important). This study also collected personal information to see if different characteristics resulted in different answers.

In our research, we are not using the SWAT framework as a base but it could help us guide the way we interpret the results. The research by ZHANG Kaixuan, however, functions as a building block for us because it inspired us to create a research framework concerning two categories that are comparable and fundamentally different as well. Instead of using psychological and physical, we created the categories recreationally and ecological. We are also using the Likert scale to determine the importance of multiple factors like the research by Joshi suggests.

Materials and methods

Study area

The Utrechtse Heuvelrug is a large area that consists of an agglomeration of various smaller nature zones that are closely connected and are all located around a central sand ridge that stretches from the Dutch province of North Holland all through Utrecht (Figure 1). There are a large number of areas that serve as cultural and historic landmarks, containing museums, castles, and monuments. However, only the southern part of the Utrechtse Heuvelrug, which covers roughly half of all the nature zones around the sand ridge, is part of the Utrechtse Heuvelrug National Park (Bussink, 2004).

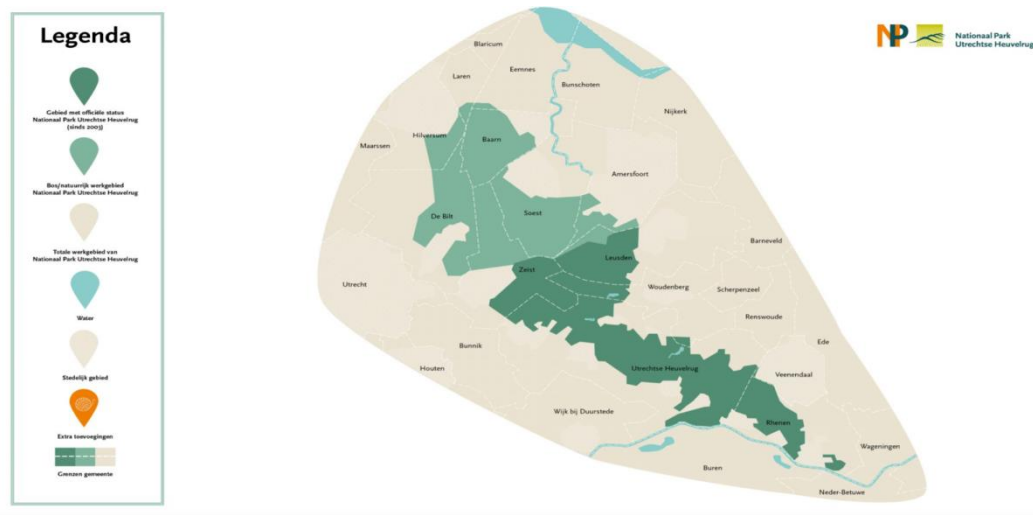


Figure 1: Schematic map of the Utrechtse Heuvelrug and its functions

For this research, residents of the municipalities that fall within or partly within the national park—Zeist, Leusden, Utrechtse Heuvelrug, Rhenen, and Woudenberg—were chosen. The choice of these areas as the study site is for two main reasons. Firstly, these municipalities contain forests and nature reserves that fall under the jurisdiction of NPUH, whereas this is not the case with other nearby municipalities. Secondly, no previous studies have been conducted to examine how the Ambitions of residents relate to the Ambitions of the main body that governs over the Utrechtse Heuvelrug: NPUH.

Questionnaire

The demographic of our research was not based on specific characteristics such as age, education level, income, occupation, and race. Instead, the focus was put solely on the location of the respondents: residents living in the municipalities that fall (partly) under the jurisdiction of NPUH. Henceforth, individuals were randomly selected from this group by utilising the simple random sampling method, meaning that each resident had an equal probability of selection. Regarding the goal for the number of people from the chosen demographic, the aim was to include as many individuals as possible.

The perceptions of the residents on several aspects of the park were identified by utilising a self-completion questionnaire from the survey generator ArcGIS Survey123. The decision to opt for this type of survey was motivated by functional and logistic considerations. By using a self-completion survey, inter-and intra-interviewer variability is kept at a minimum. Given the fact that there is a limited time frame, this type of survey obviates the need for building rapport with the individuals within the community, which saves time and costs. This questionnaire was distributed to the residents in two ways. Firstly, during the fieldwork week—1, 2, and 3 June 2021— by printing out the QR code of the questionnaire and approaching individuals while hiking through several popular trails in the Utrechtse Heuvelrug: Ravenspoor, Franse Put, and the Red Trail at Austerlitz (*appendix*: Figures 14, 15, and 16). Secondly, near the end of the fieldwork week, the link to the survey was shared in several Facebook groups: 'Zeist' Facebook group and the 'Warande people' group. After enough data was acquired, the data was stored in SPSS and by coding the variables the data was analysed using descriptive analyses.

The questionnaire was grouped into several sections: personal information, perceptions about ecosystem services, perceptions about recreational services, and Ambitions, of which the questions are provided in the appendix (*appendix*: Survey Questions).

Results

Response rate

During the first two days of the fieldwork week, a total of 180 individuals were approached, who all received a QR code that led them to the online environment of the survey. Unfortunately, this approach where the respondents were physically approached was not as successful as initially anticipated; the response rate was rather modest, with about 45 responses: a response rate of roughly 25%. After these two days, it was generally agreed upon that a different approach was necessary: posting the survey in Facebook groups of the aimed municipalities. By sharing the link to the survey in the Facebook groups 'Zeist' and 'Warande People', an additional 91 respondents filled in the questionnaire, bringing the total respondent group to 116 individuals.

Municipalities

Of the 116 individuals that filled in the survey, a large portion resided in the target municipalities: Zeist, Leusden, Utrechtse Heuvelrug, Rhenen, and Woudenberg. The largest portion of the respondents was from Zeist, with a total of 60 individuals. Nevertheless, there was a significant number of people from other municipalities and regions as well. Before the analysis of the gathered data started, it was decided that individuals from other municipalities in the province of Utrecht would also be included: Utrecht, Bilthoven, Houten, Amersfoort, Stichtse Vecht, De Bilt, Bunnik, Soest, and Nieuwegein. This was generally agreed upon in the research group, as the results of the survey showed that individuals from these municipalities also frequently visited the park for different purposes, and because these areas are rather close to the park, just like the municipalities that were initially chosen for our research. However, there were also some (9) respondents from other, more remote, municipalities. These municipalities included Borger-Odoorn, Oostkapelle, Barneveld, Zwijndrecht, Dongen, Loon op Zand, Alphen aan den Rijn, and Westland. As these respondents were tourists in the Utrechtse Heuvelrug and our research was focused on the residents of the area, the decision was made to exclude these 9 responses from our analysis. Lastly, 7 respondents did not specify which municipality they currently resided in, which resulted in excluding these individuals from the data analysis as well, as it was unclear whether they are residents or not, leaving us with 101 responses (Figure2). Figure 3 shows the different municipalities of the respondents that selected 'other'.

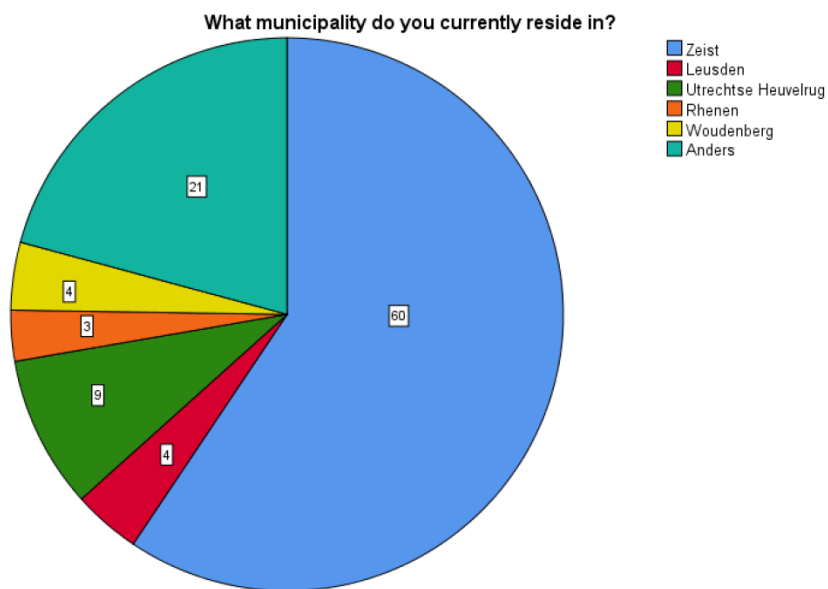


Figure 2: Municipalities of the respondents

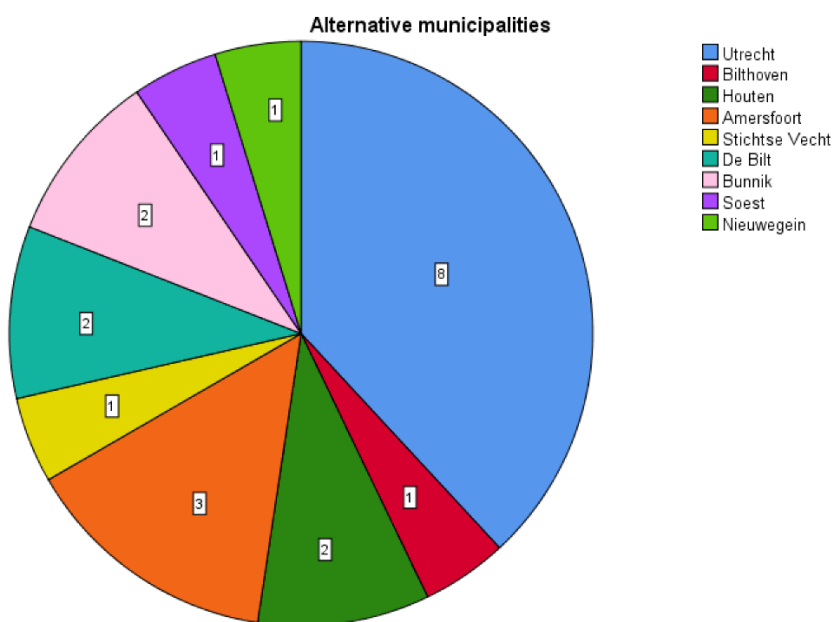


Figure 3: Municipalities of respondents that selected 'other'

Resident's views on ecosystem services

In the first section of the survey, residents were questioned about various ecosystem services and their knowledge of these ecosystem services. These ecosystem services were chosen as the most important and most relevant to the Utrechtse Heuvelrug and posed as good foundations to the perception towards ecosystem services as a whole.

The first question was a multiple-choice question if the respondents are familiar with the term ecosystem services. As can be seen in Figure 4, the majority of the respondents do not know what the term ecosystem services means or know what it roughly means. Only 31.68% of the respondents are familiar with the term. Another question was if the residents know the various ecosystem services. The residents are least familiar with the ecosystem services "Nutrient Cycling" (n=30) and "Soil Formation" (n=22), as can be seen in Figure 5. Nonetheless, the numbers of knowing certain ecosystem services are much higher. The residents are the most familiar with the ecosystem services "Water Purification/Regulation" (n=97) and "Carbon Sequestration" (n=96).

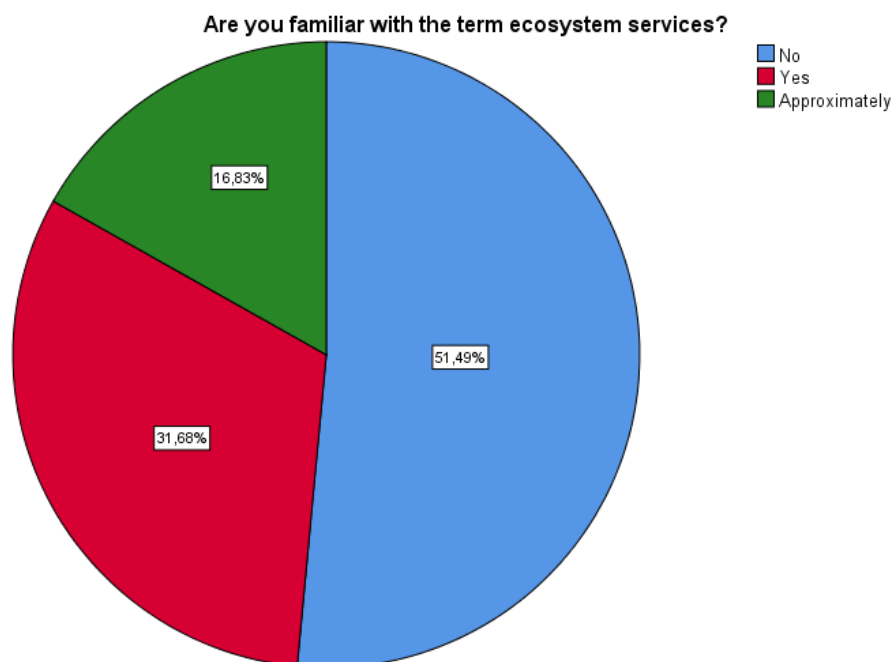


Figure 4: Pie chart of the familiarity with the term ecosystem services?

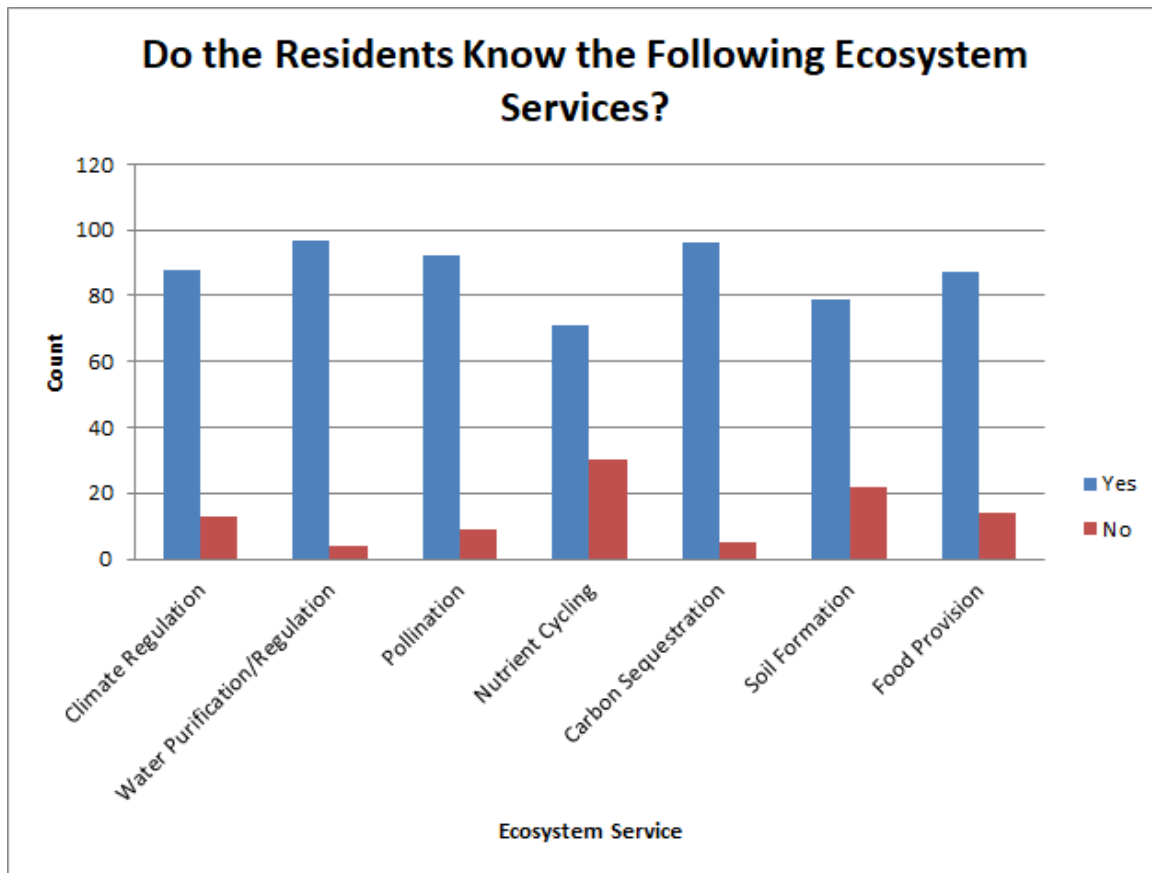


Figure 5: Histogram of knowledge of the residents on the various ecosystem services

In SPSS the variables in table 2 are coded, 0 for "No" and 1 for "Yes". By using descriptive statistical tests in SPSS, the means of the knowledge on all the ecosystem services were calculated and the overall mean (0.86) as well. Five of the seven ecosystem services are above the average mean, namely "Climate Regulation" (0.87), "Water Purification/Regulation" (0.96), "Pollination" (0.91), "Carbon Sequestration" (0.95) and "Food Provision" (0.86). The other two ecosystem services are below average, with means of 0.70 and 0.78.

Statistics

		Are you familiar with the ecosystem service climate regulation?	Are you familiar with the ecosystem service water purification/regulation?	Are you familiar with the ecosystem service pollination?	Are you familiar with the ecosystem service nutrient cycling?	Are you familiar with the ecosystem service carbon sequestration?	Are you familiar with the ecosystem service soil formation?	Are you familiar with the ecosystem service food provision?
N	Valid	101	101	101	101	101	101	101
	Missing	0	0	0	0	0	0	0
Mean		.87	.96	.91	.70	.95	.78	.86
Average Mean		.86						

Table 2: Statistics of knowledge of the residents on the various ecosystem services

After the knowledge of the respondents was established, a ranking question was asked about the importance of the various ecosystem services according to the residents. With an average of 100 responses per service, there was an overwhelming majority on the "Important" and "Very Important" scale. There were little to none deemed "Unimportant" or "Not At All Important", and some interviewees took a neutral stance on the importance of the given ecosystem services. These trends can be seen in Figure 6.

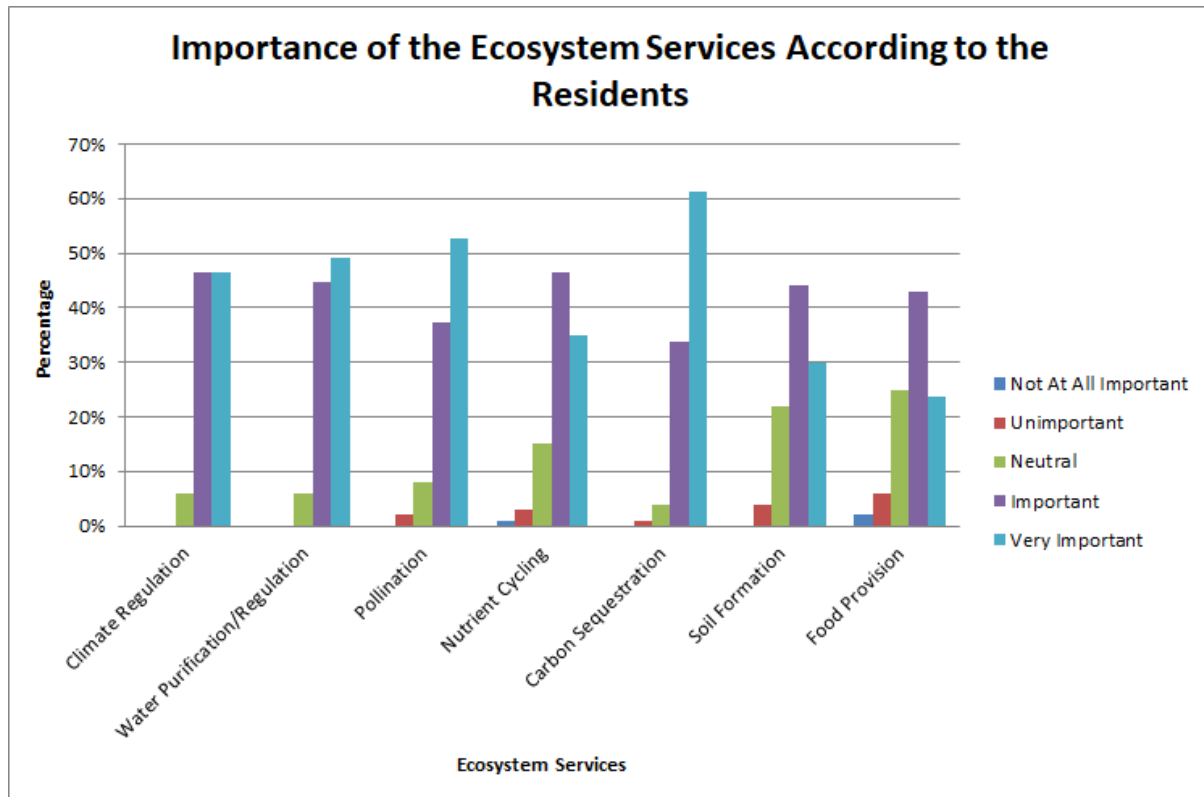


Figure 6: Histogram of the importance of the ecosystem services according to the residents

Most respondents selected "Important" (n=47; 47%) or "Very Important" (n=47; 47%) for the ecosystem service "Climate Regulation". The options "Not At All Important" and "Unimportant" were never selected for this specific ecosystem service ([appendix: Figure 18](#)). For the ecosystem service "Water Purification/Regulation" the options "Important" (n=45; 45%) and "Very Important" (n=50; 49%) were most selected. "Not At All Important" and "Unimportant" were never selected ([appendix: Figure 19](#)). The option "Very Important" (n=52; 53%) was selected most for the ecosystem service "Pollination". "Not At All Important" was never selected ([appendix: Figure 20](#)). Most respondents selected "Important" (n=46; 46%) for the ecosystem service "Nutrient Cycling", as well as "Very Important" (n=34; 35%). Every option was at least selected once ([appendix: Figure 21](#)). For the ecosystem service "Carbon Sequestration" the most selected options are "Very Important" (n=62; 61%) and "Important" (n=34; 34%). The option "Not At All Important" was never selected ([appendix: Figure 22](#)). The options "Important" (n=44; 44%) and "Very Important" (n=30; 30%) were the most selected options for the ecosystem service "Soil Formation". The option "Not At All Important" was never selected ([appendix: Figure 23](#)). Most respondents selected "Important" (n=44; 43%) and "Neutral" (n=27; 25%) for the ecosystem service "Food Provision". Every option was at least selected once ([appendix: Figure 24](#)).

As can be seen in Table 3, the options "Not At All Important" (n=2; 2%) and "Unimportant" (n=6; 6%) were most selected at the ecosystem service "Food Provision". "Neutral" (n=27; 25%) was selected most at "Food Provision" as well. Moreover, the option "Important" (n=47; 47%) was most selected at "Climate Regulation". Lastly, the option "Very Important" (n=62; 61%) was most selected at "Carbon Sequestration".

	Climate Regulation	Water Purification	Pollination	Nutrient Cycling	Carbon Sequestration	Soil Formation	Food Provision
Not At All Important	0%	0%	0%	1%	0%	0%	2%
Unimportant	0%	0%	2%	3%	1%	4%	6%
Neutral	6%	6%	8%	15%	4%	22%	25%
Important	47%	45%	37%	46%	34%	44%	43%
Very Important	47%	49%	53%	35%	61%	30%	24%
Total	100%	100%	100%	100%	100%	100%	100%

Table 3: Percentages of the importance of the several ecosystem services according to the residents

In SPSS the variables in Table 4 are coded, 0 for "Not At All Important", 1 for "Unimportant", 2 for "Neutral", 3 for "Important" and 4 for "Very Important". By using descriptive statistical tests in SPSS, the means of the importance of all the ecosystem services were calculated and the overall average mean (3.24) as well. This value of 3.24 means that the average answer of the respondents for all of the ecosystem services lies between "Important" and "Very Important". Four of the seven ecosystem services are above the average mean, namely "Climate Regulation" (3.40), "Water Purification/Regulation" (3.44), "Pollination" (3.40) and "Carbon Sequestration" (3.55). The other three ecosystem services are below average, with means of 3.10, 3.00 and 2.81.

Statistics

	Indicate the importance of the ecosystem service climate regulation	Indicate the importance of the ecosystem service water purification/regulation	Indicate the importance of the ecosystem service pollination	Indicate the importance of the ecosystem service nutrient cycling	Indicate the importance of the ecosystem service carbon sequestration	Indicate the importance of the ecosystem service soil formation	Indicate the importance of the ecosystem service food provision
N Valid	101	101	99	99	101	100	101
Missing	0	0	2	2	0	1	0
Mean	3.40	3.44	3.40	3.10	3.55	3.00	2.81
Average Mean	3.24						

Table 4: Statistics of the importance of the several ecosystem services according to the residents

Furthermore, another question focused on whether or not the ecosystem services were underrepresented, and if more attention should be given to them. The respondents had the opportunity to give a "Yes" or "No" answer per ecosystem service.

As can be seen in Table 5, at "Climate Regulation" the majority of the respondents selected "Yes" (n=64; 63%). Most respondents selected "No" for "Water Purification/Regulation" (n=53; 52%), "Pollination" (n=54; 53%), "Nutrient Cycling" (n=78; 77%), "Soil Formation" (n=76; 75%) and "Food Provision" (n=82; 81%). "Yes" (n=50; 50%) and "No"(n=51; 50%) was equally chosen for "Carbon Sequestration". An overview of this can be seen in Figure 7.

	Climate Regulation	Water Purification/Regulation	Pollination	Nutrient Cycling	Carbon Sequestration	Soil Formation	Food Provision
No	37%	52%	53%	77%	50%	75%	81%
Yes	63%	48%	47%	23%	50%	25%	19%
Total	100%	100%	100%	100%	100%	100%	100%

Table 5: Percentages of the need to give more attention to each ecosystem service according to the residents

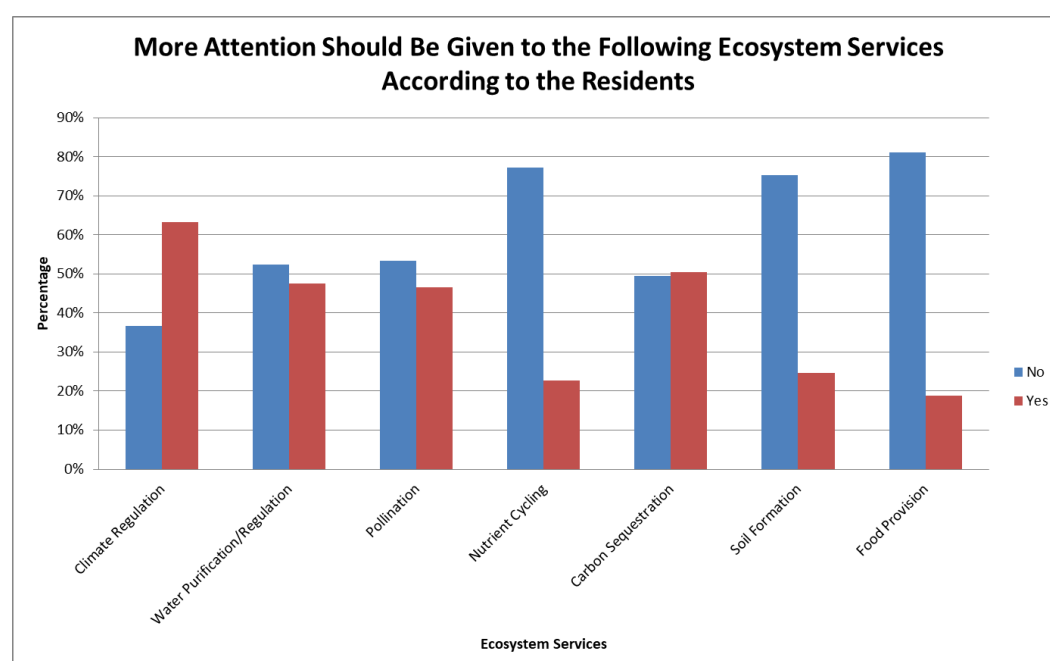


Figure 7: Histogram with the percentages of the need to give more attention to each ecosystem service according to the residents

In SPSS the variables in Table 6 are coded, 0 for "No" and 1 for "Yes". By using descriptive statistical tests in SPSS, the means of the knowledge on all the ecosystem services were calculated and the overall mean (0.39) as well. Four of the seven ecosystem services are above the average mean, namely "Climate Regulation" (0.63), "Water Purification/Regulation" (0.48), "Pollination" (0.47) and "Carbon Sequestration" (0.50). The other three ecosystem services are below average, with means of 0.23, 0.25 and 0.19.

Statistics

		Do you agree with the following statement: 'More attention should be given to the ecosystem service climate regulation'	Do you agree with the following statement: 'More attention should be given to the ecosystem service water purification/regulation'	Do you agree with the following statement: 'More attention should be given to the ecosystem service pollination'	Do you agree with the following statement: 'More attention should be given to the ecosystem service nutrient cycling'	Do you agree with the following statement : 'More attention should be given to the ecosystem service carbon sequestration'	Do you agree with the following statement: 'More attention should be given to the ecosystem service soil formation'	Do you agree with the following statement: 'More attention should be given to the ecosystem service food provision'
N	Valid	101	101	101	101	101	101	101
	Missing	0	0	0	0	0	0	0
Mean		.63	.48	.47	.23	.50	.25	.19
Average Mean		.39						

Table 6: Statistics of knowledge of the residents on the various ecosystem services

Note: These Tables and Figures are in percentages (except for the statistics Tables). In the appendix, the exact counts can be found: Table 10 and 11 and Figure 17 and 25.

Recreational Aspects

The second section of the survey focused on the recreational aspects that the park offers and that the residents and visitors participate in. The respondents were asked which recreational activity they participated in most frequently. The most popular activities were "Hiking" (n=91; 90,09%) and "Enjoying Nature" (n=79; 78,22%). A noticeable number of people selected "Meeting Up With Friends/Family" (n=31; 30,69%), "Walking With Pets" (n=21; 20,79%), "Creative Hobby" (n=15; 14,85%) and "Other" (n=17; 16,83%). The largest portion of the respondents that selected "Other", stated that their most frequent activity is horseback riding and biking. The least popular activities were "Mountain Biking" (n=10; 9,90%) and "Running" (n=9; 8,91%). All the counts and percentages can be seen in Figure 8 below and Table 12 in the appendix.

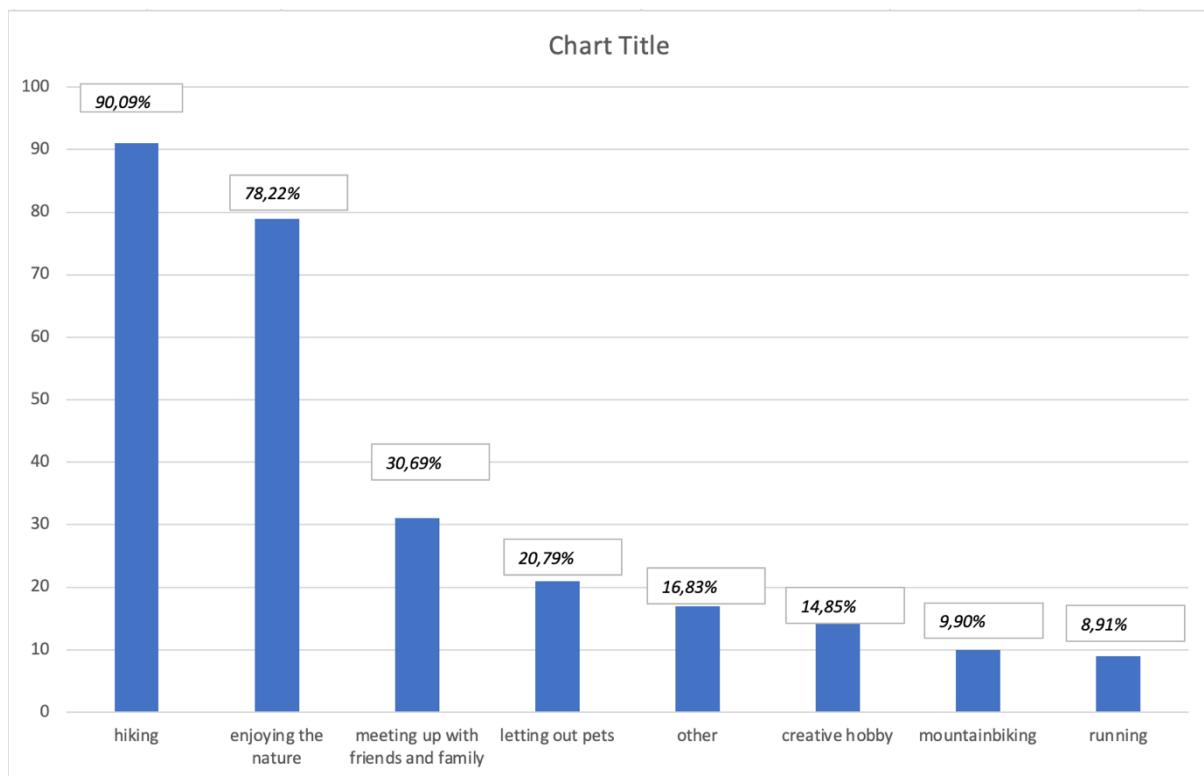


Figure 8: Recreational aspects of the respondents

Residents' views on the ambitions of NPUH

By far the largest portion of the respondents stated that they "Agreed" (n=44; 44%) or "Strongly Agreed" (n=48; 48%) with Ambition 1. As stated before, we received a total of 101 respondents, but one individual did not select any of the options at the first Ambition, bringing the total number of respondents for the first Ambition to 100. For Ambition 2, the most common answers were "Agree" (n=37; 36,63%) and "Neutral" (30,69%). For Ambition 3, the most common answers were "Agree" (n=35; 34,7%) and "Neutral" (n=34; 33,7%). For Ambition 4, the largest portion of respondents selected "Neutral" (n=41; 40,6%) and "Disagree" (n=31; 30,7%). For Ambition 5, most respondents selected "Agree" (n=39; 38,6%) and "Neutral" (n=38; 37,6%). And lastly, for Ambition 6 most respondents selected "Agree" (n=39; 38,6%) and "Neutral" (n=36; 35,6%). All the aforementioned data can be seen in the Figures 9 through 14 below and in the Tables 13 through 18 in the appendix.

To what extent do you agree with ambition 1 (Further conservation, management, and development of nature, landscape and cultural history)

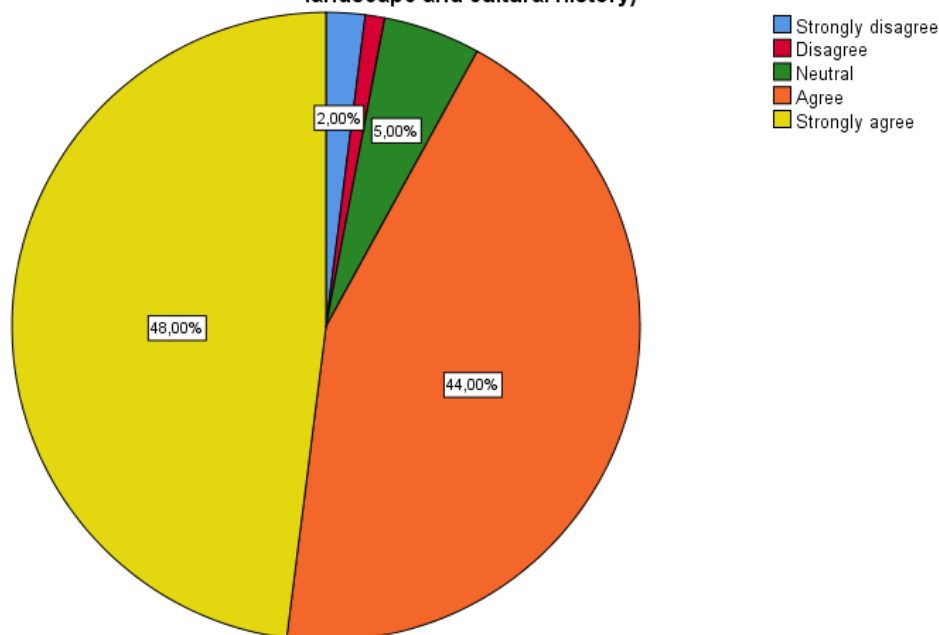


Figure 9: Pie chart showing the perceptions of residents on ambition 1

To what extent do you agree with ambition 2 (Increase experience and accessibility: with qualitative route structures, recognisability and appearance, educational programs and suitable recreational facilities)

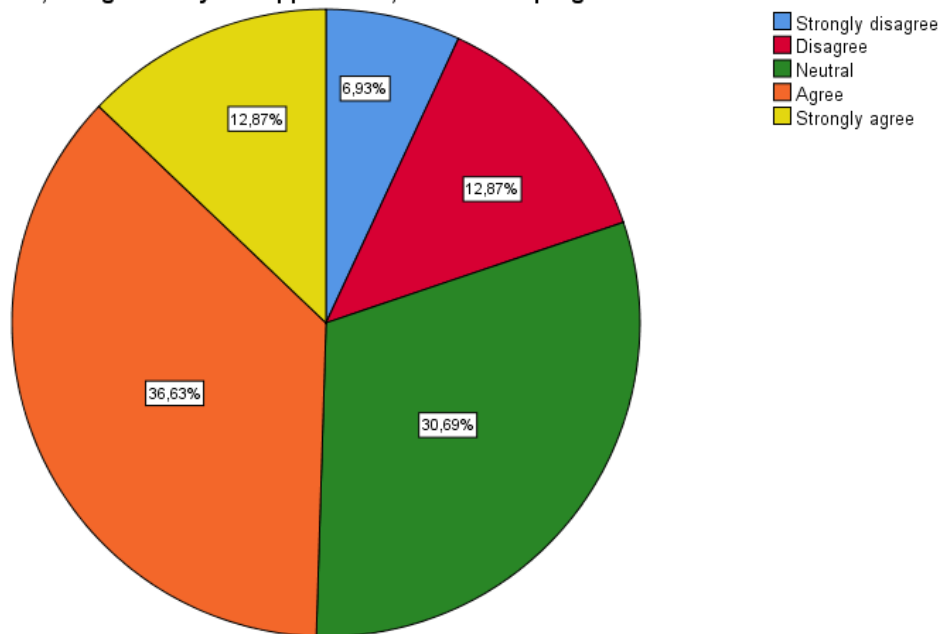


Figure 10: Pie chart showing the perceptions of residents on ambition 2

To what extent do you agree with ambition 3 (Further improve the supervision and enforcement: more effectiveness and efficiency)

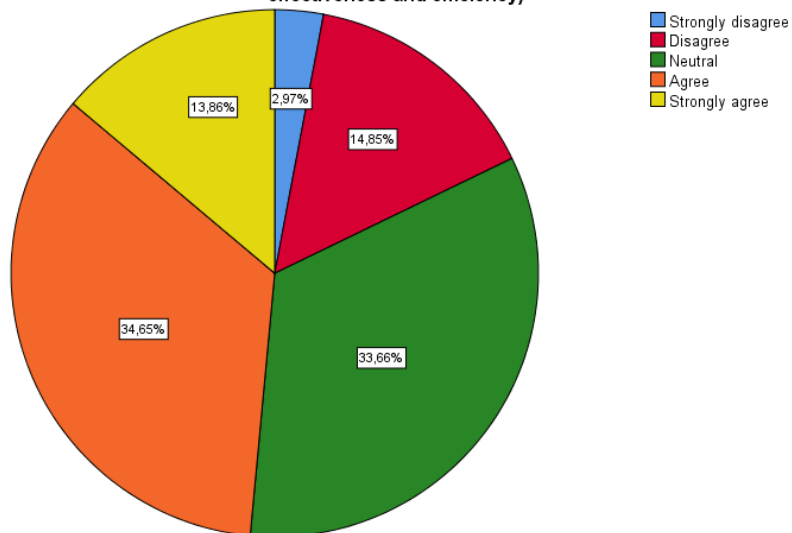


Figure 11: Pie chart showing the perceptions of residents on ambition 3

To what extent do you agree with ambition 4 (Brand enhancement: Developing Heuvelrug National Park into a strong brand, whereby companies, institutions and residents feel attracted to it. A brand that is visible in the expressions and communication, but i

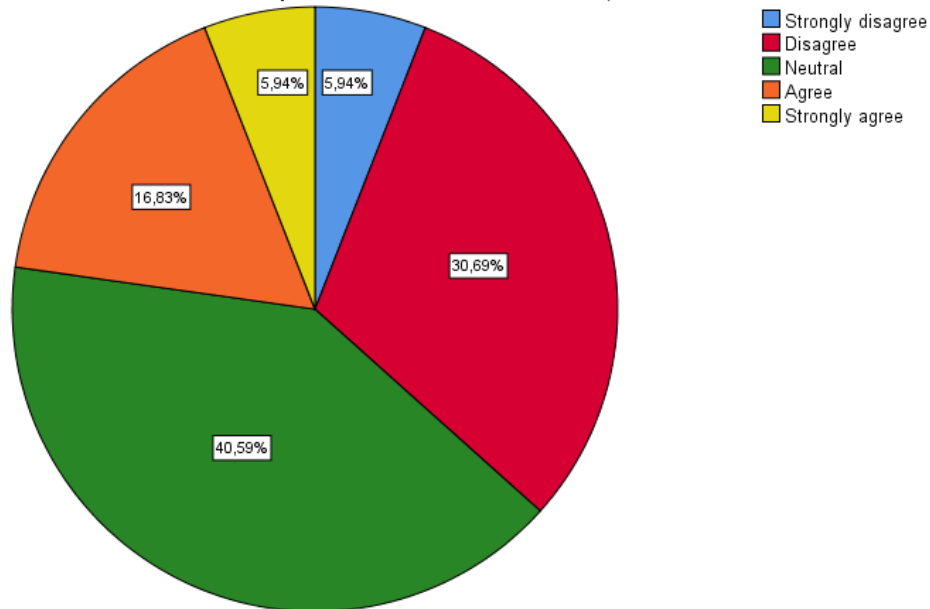


Figure 12: Pie chart showing the perceptions of residents on ambition 4

To what extent do you agree with ambition 5 (Growing economic basis for nature, landscape and heritage. We want to build a community of parties that will jointly financially support the national park)

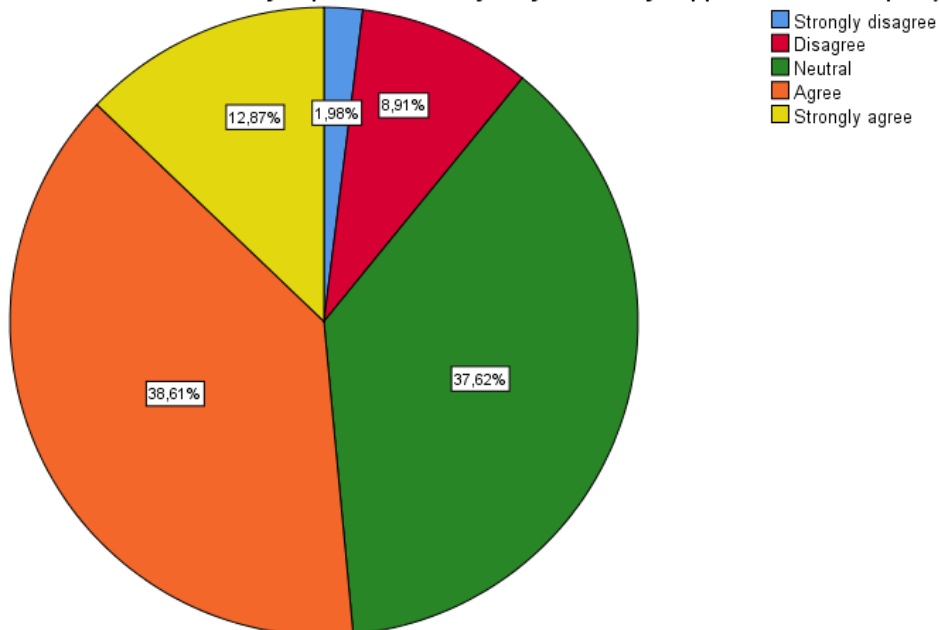


Figure 13: Pie chart showing the perceptions of residents on ambition 5

To what extent do you agree with ambition 6 (Unique National Park: Working together to expand the borders and strengthening the unique values of the Heuvelrug National Park and gaining national recognition for this)

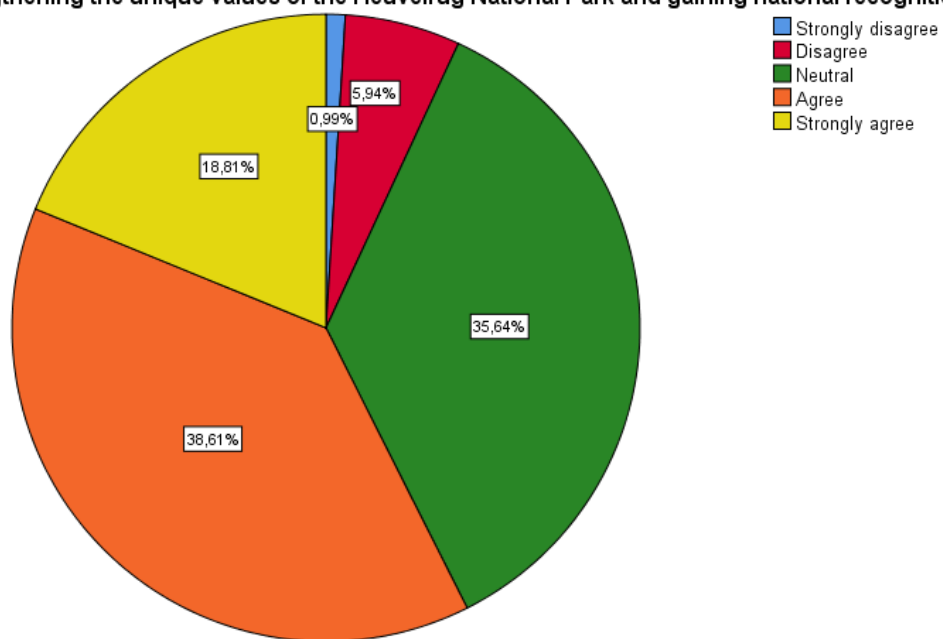


Figure 14: Perceptions of residents on ambition 6

As can be seen in Table 7, by using descriptive statistical tests in SPSS, the means of all the Ambitions were calculated and the overall average mean as well. The following codes were used when calculating the means: 0 = "Strongly Disagree", 1 = "Disagree", 2= "Neutral", 3= "Agree", and 4= "Strongly Agree". Two Ambitions, Ambition 1 and 6, are above the average mean; in other words, for Ambition 1 the most average answer lies between "Agree" and "Strongly Agree", and for Ambition 6 between "Neutral" and "Agree". The latter is also the case for Ambitions 2,3, and 5, with means of 2.36; 2.42; and 2.51 respectively. The average answer for Ambition 4 was considerably below average, with a mean of 1.86; this means the average answer lies between "Disagree" and "Neutral".

Statistics of all six ambitions							
		To what extent do you agree with ambition 1	To what extent do you agree with ambition 2	To what extent do you agree with ambition 3	To what extent do you agree with ambition 4	To what extent do you agree with ambition 5	To what extent do you agree with ambition 6
N	Valid	100	101	101	101	101	101
	Missing	1	0	0	0	0	0
Mean		3.35	2.36	2.42	1.86	2.51	2.68
Average Mean		2.53					

Table 7: Statistics of all six ambitions

Discussion

Answering the research questions

The research question that this paper aims to answer is relating to the resident's perception of how well the Ambitions that the Utrechtse Heuvelrug represent their views. The overarching question was thereafter divided into three subquestions. These sub-questions aimed to make the perception more specifically related to different aspects of the park; emphasis was placed on social science, natural science, as well as the Ambitions that the park had developed. Therefore, the sub-questions further explored the ecosystem services, recreational aspects, and ambitions of the park.

These sub-questions were further implored in the survey that visitors received during the experimental phase. The results as a whole were quite positive; many respondents responded positively towards the Ambitions and agreed with the statements that were given to them.

Ecosystem Services

Ecosystem services is a term that is not heavily used amongst visitors who like to solely enjoy the park for what it is. However, the first section questioned the perceptions on the importance of various ecosystem services that are present in the park itself. These services are indirectly enjoyed by visitors and are often not realised by those who visit the park for non-research or educational purposes. Within the survey, the respondents were asked whether or not they understood the term "ecosystem services", as that would have an effect on the overall outcome of the section as a whole. As can be depicted from Figure 4, the majority of people did not know the meaning of the term.

When asked whether they knew of or understood the different ecosystem services that were presented to them, the results were drastically different. Over 60% of people knew the different ecosystem services; a conclusion can be drawn that they knew the processes respectively, but did not know the overarching term that they have acquired. Respondents understood the water purification service the most. Nevertheless, as can be depicted from Figure 5, the respondents did understand the different processes; it can therefore be concluded that the answers that they gave regarding the services are reliable.

This can be statistically explained as well when looking at Table 2. It can be noted that the average mean of understanding is .86. This concludes that most people knew the ecosystem services; the only 2 services that were under the average mean were nutrient cycling and soil formation. These two ecosystem services were the least known, whilst water purification and carbon sequestration were known.

The first question asked respondents to rank the importance of different ecosystem services. The overall result was that all the processes were "Important"; as can be depicted from Graph 6 and Table 3, only about 2.63% of all answers were "Unimportant" or "Not At All Important". It seemed that the most important processes were climate regulation and water purification.

This was as expected, as the issue of sustainability and preserving the processes within nature has become a big topic over the last few years, seeing as it has been the overarching goal of the United Nations (Powe, N., 2020).

This can be supported by the statistical test in Table 4. With an average mean of 3.24, it shows that the respondents thought the ecosystem services were important. Only 3 of the ecosystem services ranked under the mean, namely nutrient cycling, soil formation, and food provisioning. The most important services, based on their means, were carbon sequestration and water purification.

The second question, however, came as a surprise. Despite knowing all of the ecosystem services and deeming them important, not every process was underrepresented or needed more representation. The results in Figure 7 show that nutrient cycling was not underrepresented, but that climate regulation, which was the one that people knew the most, was underrepresented. It showed that the less people knew about a topic, the less attention it needed. Hence, it is evident that the education of residents is paramount when questioning them on their views of sustainable policy and management.

This can be further supported by statistical analysis. When looking at Table 6, it can be noted that there is an average mean of 0.39. It can be concluded that those statements whose mean added up to above the average mean were seen as underrepresented; in this case, the most underrepresented services were climate regulation, carbon sequestration, and water purification. The rest of the services, whereunder food provisioning, nutrient cycling, and soil formation, had a mean that was below the average mean, which indicates that they are not underrepresented.

Recreational Aspects

The second section of the survey focused on the recreational aspects that the park offers and that the residents and visitors participate in. Interviewees were asked which recreational activity they participated in the most, to get a clearer overview of how well-represented those activities are within the national park.

The results were as expected; the park itself accommodates heavily for hiking paths, and many sites and sources show a multitude of walking paths.

The results in Figure 8 showed that an overwhelming majority of residents came to the park to hike or enjoy nature. This seemed natural, especially in the time that the questions were asked; the weather was warm after weeks of cold and rain, and people were enjoying the sun. What was a relief to see was that the majority of people were content with how much attention was given to the recreational values of the forest; they rather believed that more attention should be given towards the ecological and conservation aspects over recreational.

Ambitions of the Utrechtse Heuvelrug

The Ambitions of the Utrechtse Heuvelrug is what the main research question asks about the most. The survey aimed to find out how much these Ambitions coincide with the perceptions of the residents living around the Utrechtse Heuvelrug. These Ambitions, designed by the park itself, can be viewed in the Literature Review (Oosterman, J., 2018).

The six Ambitions were posted by NPUH themselves and range from social science considerations (Ambitions 2, 3, 4) to natural science considerations (Ambitions 1, 5, 6). Within the survey, the respondents were asked to rate how much they agreed with the different Ambitions of NPUH. As can be seen in Table 7, when comparing the mean values concerning the importance of the different Ambitions, Ambition 1 scores the highest. This means that most residents believe that the management and development of nature, landscape and cultural history should deserve the most attention. This automatically connects to the importance of the ecosystem services; residents believe that the main objective of forest management should be maintaining and protecting nature.

Furthermore, the results showed that people mostly agreed or remained neutral about the park's Ambitions, which is a very positive outcome. Because the residents were mostly agreeing with or neutral, it is quite easy to pinpoint the weaknesses in the Ambitions, and where improvements could be suggested.

The one Ambition that stands out as having the most disagreements is Ambition 4, Brand Enhancement. When looking at the descriptive statistics provided in Table 7, it can be noted that the mean of Ambition 4, with a mean of 1.86, is considerably lower than the average mean of 2.53. Hence, it can be concluded that Ambition 4 differed remarkably from the central tendency. This could be because residents and visitors do not want the park to become a business over being a park for recreational activities; ideally, it is assumed that the people want to keep the park as it is, without official company and institutional interference.

Nevertheless, the Ambitions seem to harmonise with the view of the residents in the area to a great extent. Not many drawbacks can be taken from this data collected, however, attention could be placed on Ambitions that have received a more negative connotation from the respondents; namely, the Ambitions regarding branding, economy, and any sort of financial or authoritative gain. These

Ambitions do not fall well in the eyes of the respondents, as they are happier with the Ambitions to conserve and protect nature for what it is.

Previous Research

Utilising the park for creative purposes such as hobbies scored the third lowest with all respondents, this is in line with previous research, which states that creative recreation purposes are regarded to be among the least important factors considering recreation (Buchel, 2015). Furthermore, respondents who answered that they used the park in a social setting made up roughly 30 percent of all recreational uses, scoring the third highest out of all eight recreational purposes. This similarly corresponds to previous research, which can be explained by the fact that with good weather the park will be used more often to meet with friends or family (Buchel, 2015).

Limitations

In the design of this research, it was decided to utilise closed as well as open questions, to include as many aspects as possible that could be of importance considering the residents' perceptions of the park's management. However, eventual changes, such as clarifying questions, were deemed redundant. Additionally, in the question regarding recreational activities, some potential answers were such as biking or horseback riding.

To go on, because the questions were, for the most part, closed, it was hard to get more ideas besides the questions that were asked. Because it was hard to establish a tone, it was also hard to establish a proper narrative or reasoning for the responses. Due to this, assumptions had to be made to continue the discussion portion. Furthermore, to analyse the data, solely descriptive statistics were used. This was due to the nature of the data, which did not allow for statistical tests using significance. Hence, this results in some uncertainty in the interpretation of the data.

Additionally, the fact that this study was conducted during an exceptionally warm week has influenced the results. Along with that, the number of responses was also drastically lower because of the COVID-19 conditions; it was decided that it would not be professional to go door to door. Therefore, the method had to be adjusted to accommodate that.

Conclusion

The research question we aspired to answer was: *To what extent do the Ambitions of the National Park Utrechtse Heuvelrug represent the opinions of the residents about the functionality of the forest?* To do that, answers to our three sub-questions had to be formulated and summarised:

1. *Which ecosystem services that are offered by the Utrechtse Heuvelrug do residents consider most important?*

All ecosystem services are considered important by the residents and all of them demand more attention. This connects to Ambition 1.2: nature and landscape management and development. However, there were some differences in the level of importance of ecosystem services. By comparing the mean values that represent the importance, it can be concluded that the residents believe that food provisioning, NC and soil formation are underrepresented and thus deserve more attention. This is interesting because when the residents had to fill in which ecosystem services they considered most important, they answered climate regulation and food provisioning.

2. *Which recreational aspect(s) that visitors can participate in do the residents consider most important?*

The residents consider the recreational aspects very important as well, meaning that Ambition 2 (increasing perception and accessibility) is also considered very important by the residents. Especially "hiking" and "enjoying nature" were deemed popular recreational activities and thus deserve attention.

3. *Which of the six Ambitions that the National Park Utrechtse Heuvelrug have posted on their website do the residents consider most important?*

Almost all Ambitions of the National Park Utrechtse Heuvelrug are considered important. However, there are two clear differences found when comparing the mean values with each other. Ambition 1 (Nature, landscape and cultural history: management and development) is considered most important and Ambition 4 (strengthening the brand) is considered least important by the residents.

After answering these sub-questions and analysing the results, a conclusion can be drawn, namely: The Ambitions of the National Park Utrechtse Heuvelrug mostly align with the opinions of the residents about the functionality of the forest. All Ambitions are considered remotely important and thus the overall focus of the Utrechtse Heuvelrug on forest management is relevant. The results do, however, show that some ecological aspects are considered more important than some recreation aspects. According to the residents, Ambitions about strengthening the [Utrechtse Heuvelrug] brand and creating a unique nature area (Ambition 4) should not necessarily be a priority of forest management. Instead, more important to them is giving attention to maintaining nature and ecosystem services and developing within this area of expertise (Ambition 1). Furthermore,

recreational aspects, especially hiking and enjoying nature, should also be considered important. This means that Ambition 2, increasing perception and accessibility, is prioritised.

In short, even though the importance of most Ambitions of National Park Utrechtse Heuvelrug is agreed with by the residents, they could be slightly adapted to focus more on ecological aspects than recreational ones. Furthermore, if professionals do consider prioritising recreational aspects of critical importance, then the residents can be educated on the "why" and "how" questions to understand forest management better. Either way, by understanding the opinions of the residents about the current form of forest management, the communication between the two parties can be strengthened, resulting in more understanding, development, adaptation and happiness.

Further research possibilities could include a more in-depth analysis of the relationship between residents and the National Park Utrechtse Heuvelrug as well as looking into more specific ecological and recreational values of the forest. Also, future research could take longer instead of just one week and include a more diverse and bigger test group to find significant differences that are more reliable and widespread. Furthermore, it could be very interesting to find out why the current six Ambitions are in place and what the National Park thinks of the opinions of the residents. When gaining more knowledge about subtopics that are related to the most beneficial form of forest management for all parties, knowledge gaps can be identified, education can be prioritised and management can be adapted.

Relevance and Integration

Our research has answered the following question: *To what extent do the Ambitions of the National Park Utrechtse Heuvelrug represent the opinions of the residents about the functionality of the forest?* Knowledge on this topic is of critical importance to find out what the best way of forest management entails and how it benefits all parties; the residents, the government, the tourists and the organisations involved in protecting it. When there is a big knowledge gap between any of these parties, conflicts may arise and either nature and/or money could be lost. By finding out what the opinions of the residents are and if they are content with the current Ambitions and way of forest management, it can become clear whether or not more education about certain topics is necessary and if maybe there needs to be a shift of priorities within the management department.

The results, discussion and conclusion of our research all point out that our test subjects believe that the protection of nature/maintaining ecosystems is considered the most important aspect of forest management. The majority of the people think more attention should be given to this, meaning that the ecological Ambitions of the Utrechtse Heuvelrug could deserve more attention and be prioritised by the foresters to make sure more residents/tourists are happy with the forest. Because people are already aware of the importance of nature/ecosystems, more education about these topics are not necessary.

However, the results do show that some ecosystem services are considered more important than others. Education on these lesser-known ecosystems (food provisioning, nutrient cycling) could make more people understand why exactly there has to be attention paid to them. Climate regulation/carbon sequestration is considered most important, meaning that it would be beneficial if more attention is given to this by both foresters and National Park Utrechtse Heuvelrug (ecological Ambition 1.2: nature and landscape management and development).

When looking at the recreational aspect of forest management, it is clear that the vast majority of the residents often partake in hiking (89,98%)/enjoying nature (77,78%) in comparison to other recreational activities. This means that it is very important that a lot of attention goes to maintaining hiking paths and keeping the nature areas clean and beautiful. This goes hand in hand with Ambitions 2: increasing perception and accessibility. Furthermore, many people think that (ecological) Ambition 3 should be considered important as well: supervision and enforcement [considering landscape and forest management]. These opinions are [mostly] from residents instead of from tourists who live far away (subtopic 2C) and foresters who have much more experience in the area of forest management (subtopic 1F). Our research would be strengthened if we had looked at the opinions of multiple different groups and compared the results. Also, more information on how exactly forests are managed (subtopic 1D) and what the recreation inventory entails (subtopic 2A) could have helped form questions and analyse the results.

The results show that the residents consider the ecological Ambitions more important than the recreational ones. This information is incredibly relevant because it means that, for them, less attention/money should go to recreational aspects, such as making the Utrechtse Heuvelrug a strong brand and making it "unique" (Ambition 4 and 6.1). Instead, time, money and effort can be spent thinking of more ways to protect nature and all its benefits.

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Appendices

Appendix 1 – Data Management Plan

Our data management plan consists of the data that we will receive off of the aforementioned survey. This survey was in no shape, way, or form mandatory, and participants filled it out to their own accord. The privacy of the respondent's answers is of extreme importance to us, and we handle the responses with utmost care and consideration; in the study, solely the answers and opinions get used for analysis, and the privacy of the residents themselves remains intact.

This privacy statement and management plan will be communicated to the participants before the survey so that they are aware of this as they take the survey. We will also explicitly let them know that the information will only be stored locally on the researcher's drive until the end of the essay, where after it will be destroyed.

The data will be conducted via Survey123, which is an online survey creator that is quick and easy to access. We will have access to the answers that come from the survey, and these answers will not be shared with anyone else but our group. We will solely be using the statistics of the opinions section in our study, and will analyse it to ensure that the residents remain anonymous.

After we have finished our report and have analysed the data, we will be discarding the data in a safe way, so that no one can track the results further and so that the identity of the residents remains anonymous.

Appendix 2 – Survey Questions

The purpose of this research project is to find out to what extent the ambitions for the management of the park differ between the residents of the chosen municipalities (Utrechtse Heuvelrug, Rhenen, Zeist, Leusden, and Woudenberg) and the board of the national park.

This is a research project being conducted by 5 first-year students of Global Sustainability Science students of Utrecht University, through Survey123. You are invited to participate in this research project because you live in one of the following municipalities: Utrechtse Heuvelrug, Rhenen, Zeist, Leusden, and Woudenberg.

Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized.

The procedure involves filling an online survey that will take approximately 5-10 minutes. Your responses will be confidential and we do not collect identifying information such as your name, email address or IP address. We will do our best to keep your information confidential. All data is stored in a password protected electronic format. To help protect your confidentiality, the surveys will not contain information that will personally identify you. The results of this study will be used for scholarly purposes only and may be shared within our research group and our supervisors.

If you have any questions about the research study, please contact Jill van Bekhoven at the following email address: j.vanbekhoven@students.uu.nl

Clicking on the "agree" button below indicates that:

- **you have read the above information**
- **you voluntarily agree to participate**

If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.

agree/disagree

A) Personal Information

1. What is your age?

- [.....]

2. What municipality do you currently reside in?

- Zeist
- Leusden
- Utrechtse Heuvelrug
- Rhenen
- Woudenberg

3. How often do you visit National Park Utrechtse Heuvelrug?

- A few times a year
- Once a month
- Once a week
- Several times a week
- (Almost) every day

B) Ecosystem Services

1. Are you familiar with the term ecosystem services?

- Yes
- No
- I do not know
- Maybe

If you were unfamiliar with the term: ecosystem services are the many and varied benefits to humans provided by the natural environment and from healthy ecosystems.

2. Indicate the importance of each of the following ecosystem services

	Important	Somewhat important	Neutral	Somewhat not important	Not important
Climate Regulation					
Water purification/regulation					
Pollination					
Nutrient Cycling					
Carbon sequestration					
Soil Formation					
Food Provision					

2. It is possible that you were not aware of some of the aforementioned ecosystem services. If so, which one(s): _____

3. Do you agree with the following statement: 'More attention should be given to a certain ecosystem service'

yes / no

C) Recreational services

1. Which of the following recreational activities do you most often partake in? Select all that apply

- Perceiving the scenery
- Running
- Hiking
- Mountain Biking
- Walking your dog(s) or other pets
- Meeting up with friends/family
- Other, please specify: _____

2. **Do you agree with the following statement: 'I am entirely able to pursue activities that I find enjoyable'**

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree or disagree
- Somewhat agree
- Agree
- Strongly agree

3. **Do you agree with the following statement: 'More attention should be given to the recreational values of the forest'**

yes / no

4. **If so, list what you would like to see more/less of:**

D) Ambitions

These are all of the ambitions of the National Park Utrechtse heuvelrug

1. **To what extent do you agree with ambition 1 (Further conservation, management, and development of nature, landscape and cultural history)**

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree or disagree
- Somewhat agree
- Agree
- Strongly agree

2. **To what extent do you agree with ambition 2 (Increase experience and accessibility: with qualitative route structures, recognisability and appearance, educational programs and suitable recreational facilities)**

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree or disagree

- Somewhat agree
- Agree
- Strongly agree

3. To what extent do you agree with ambition 3 (Further improve the supervision and enforcement: more effectiveness and efficiency)

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree or disagree
- Somewhat agree
- Agree
- Strongly agree

4. To what extent do you agree with ambition 4 (Brand enhancement: Developing Heuvelrug National Park into a strong brand, whereby companies, institutions and residents feel attracted to it. A brand that is visible in the expressions and communication, but is also experienced at the entrances to the park)

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree or disagree
- Somewhat agree
- Agree
- Strongly agree

5. To what extent do you agree with ambition 5 (Growing economic basis for nature, landscape and heritage. We want to build a community of parties that will jointly financially support the national park)

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree or disagree
- Somewhat agree
- Agree

- Strongly agree

6. To what extent do you agree with ambition 6 (Unique National Park: Working together to expand the borders and strengthening the unique values of the Heuvelrug National Park and gaining national recognition for this)

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree or disagree
- Somewhat agree
- Agree
- Strongly agree

Thank you for filling in the survey!

You can put down your email-address below for a chance to win a bol.com gift card:

Appendix 3 – Figures



Figure 14: Trail Franse Put (<https://www.alltrails.com/explore/trail/netherlands/utrecht/franse-put--2>)

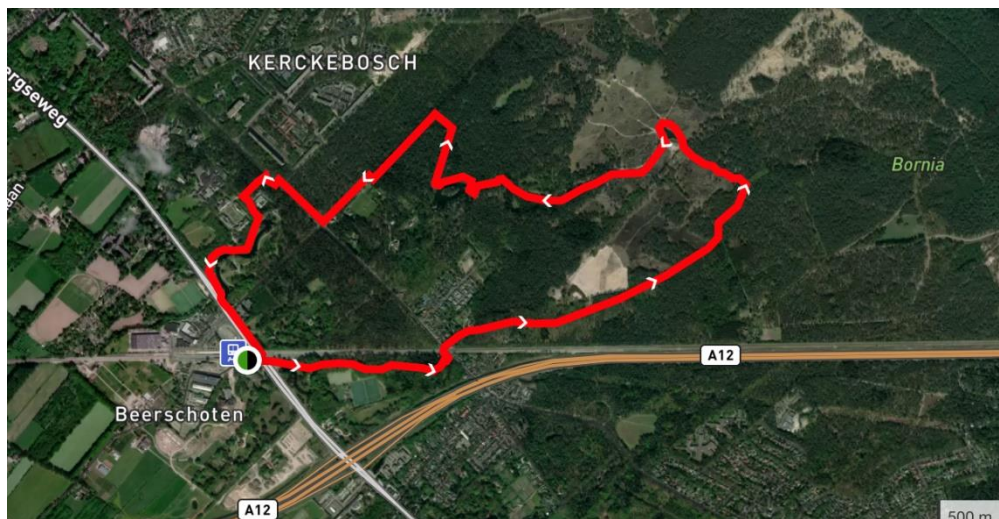


Figure 15: Trail Ravenspoor (<https://www.alltrails.com/explore/trail/netherlands/utrecht/ravenspoor>)



Figure 16: Trail Austerlitz: The White House (Red Trail)

(<https://www.alltrails.com/explore/trail/netherlands/utrecht/austerlitz-het-witte-huis-rode-route>)

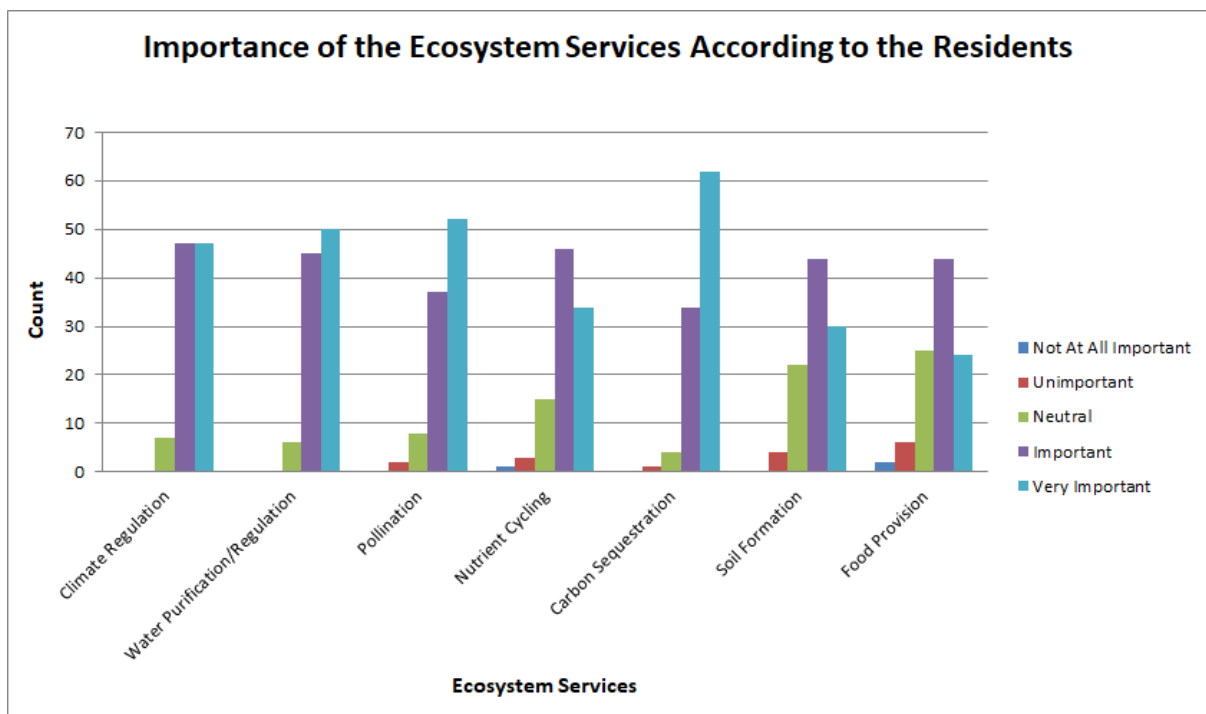


Figure 17: Histogram of the count of the importance of each ecosystem service

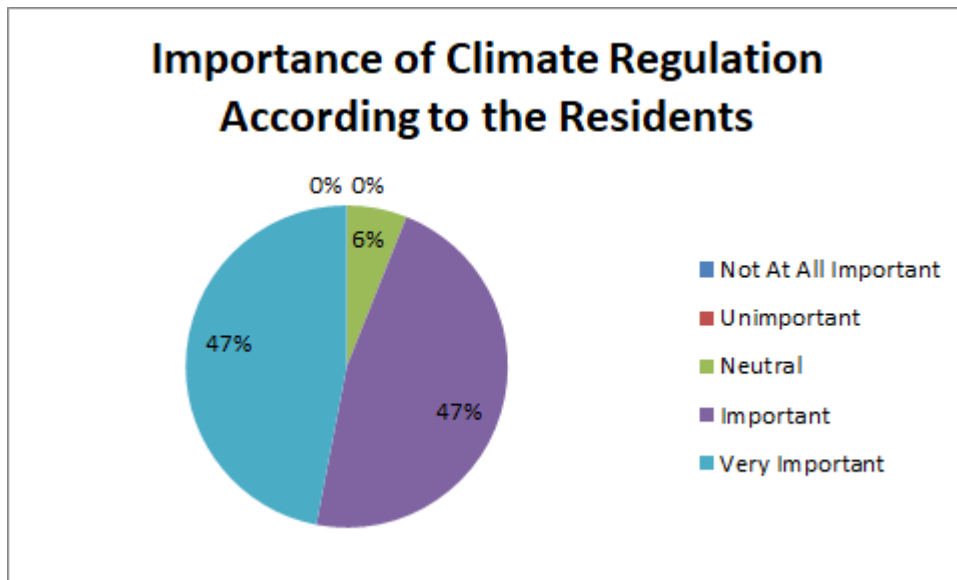


Figure 18: Pie chart with percentages of climate regulation according to the residents

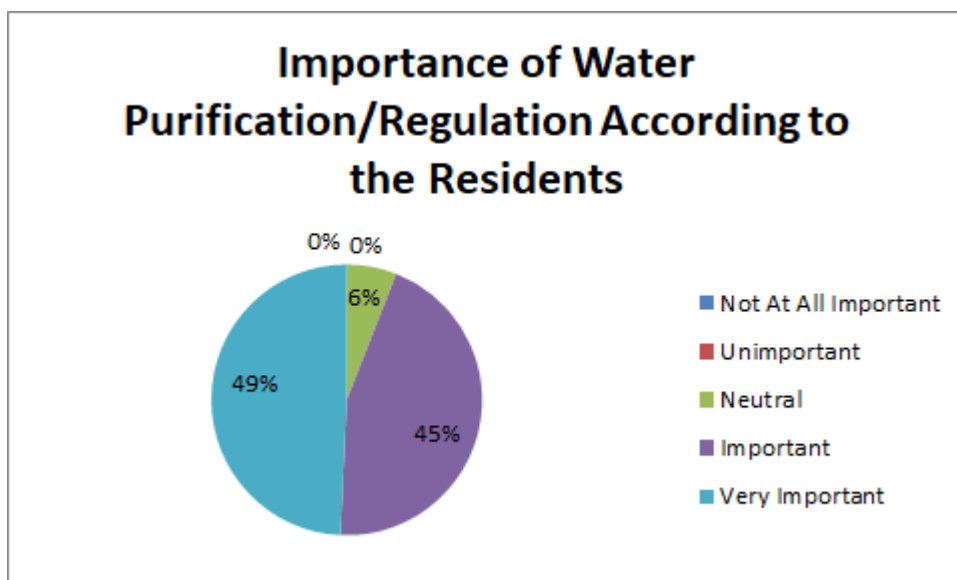


Figure 19: Pie chart with percentages of water purification/regulation according to the residents

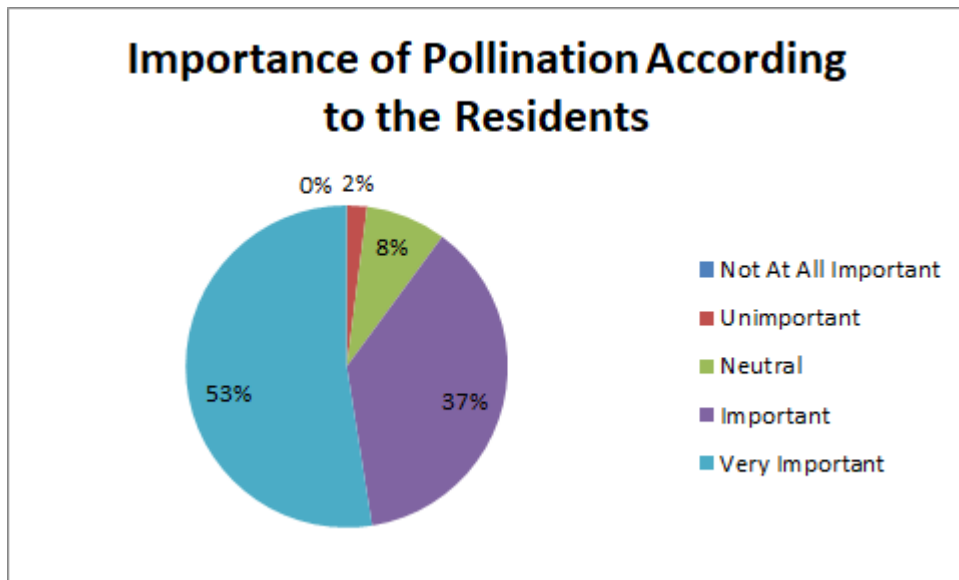


Figure 20: Pie chart with percentages of pollination according to the residents

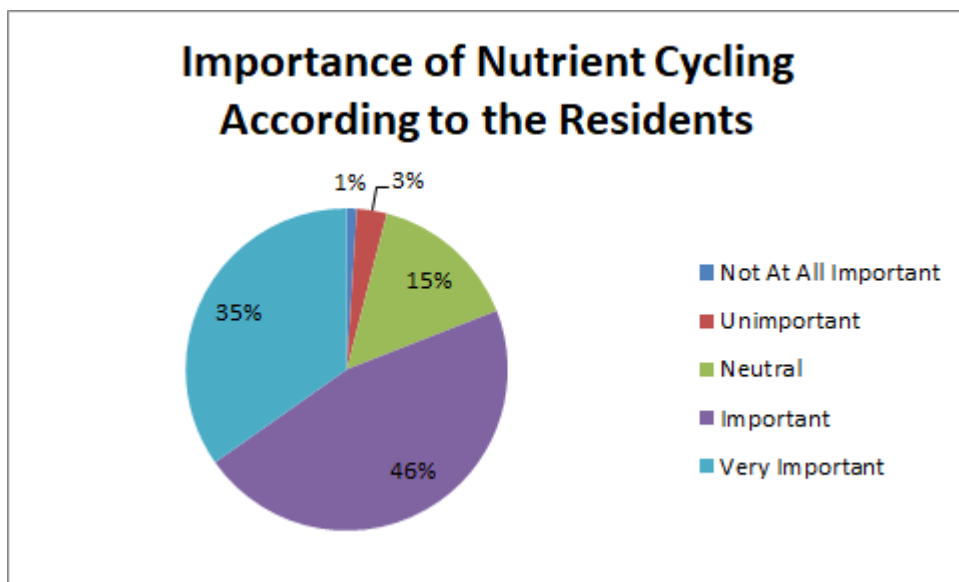


Figure 21: Pie chart with percentages of nutrient cycling according to the residents

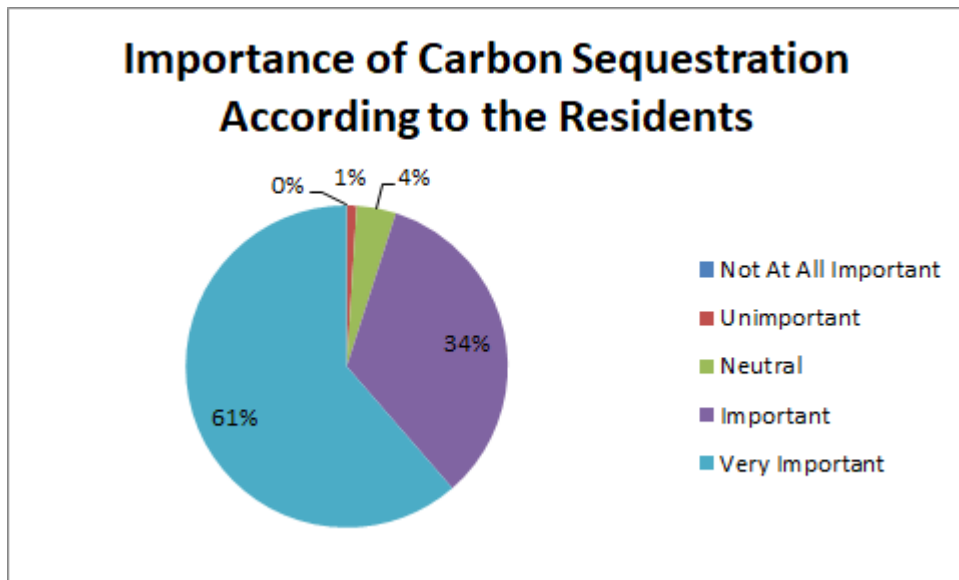


Figure 22: Pie chart with percentages of carbon sequestration according to the residents

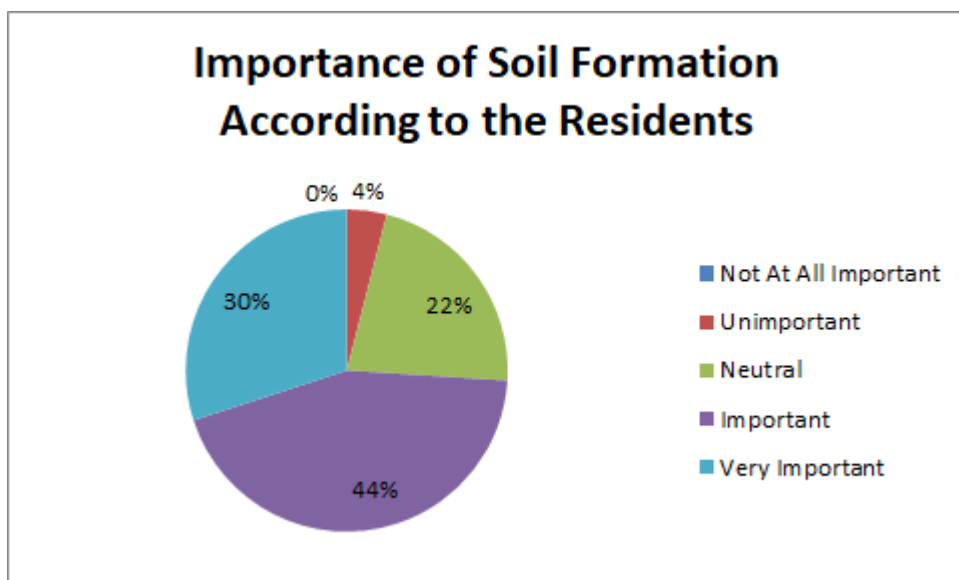


Figure 23: Pie chart with percentages of soil formation according to the residents

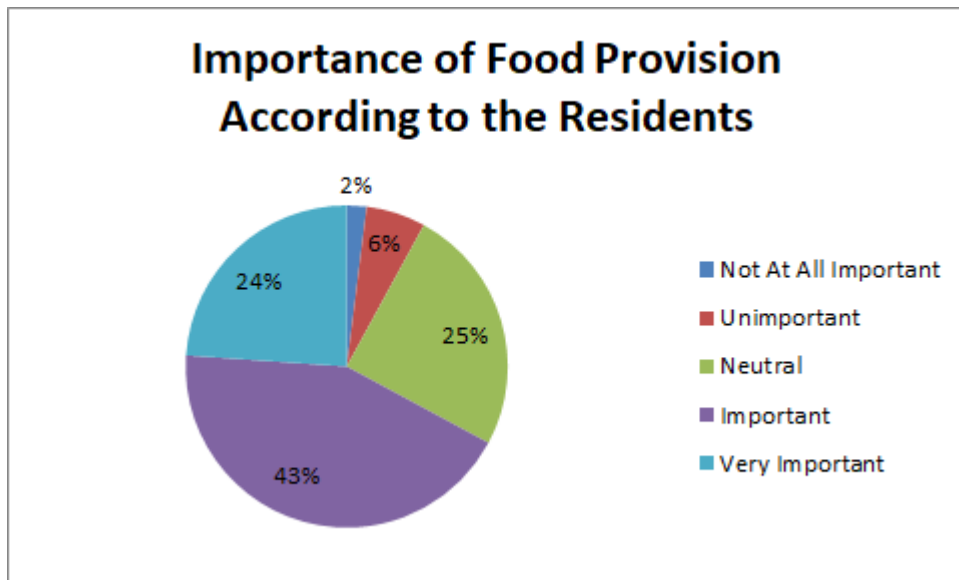


Figure 24: Pie chart with percentages of food provision according to the residents

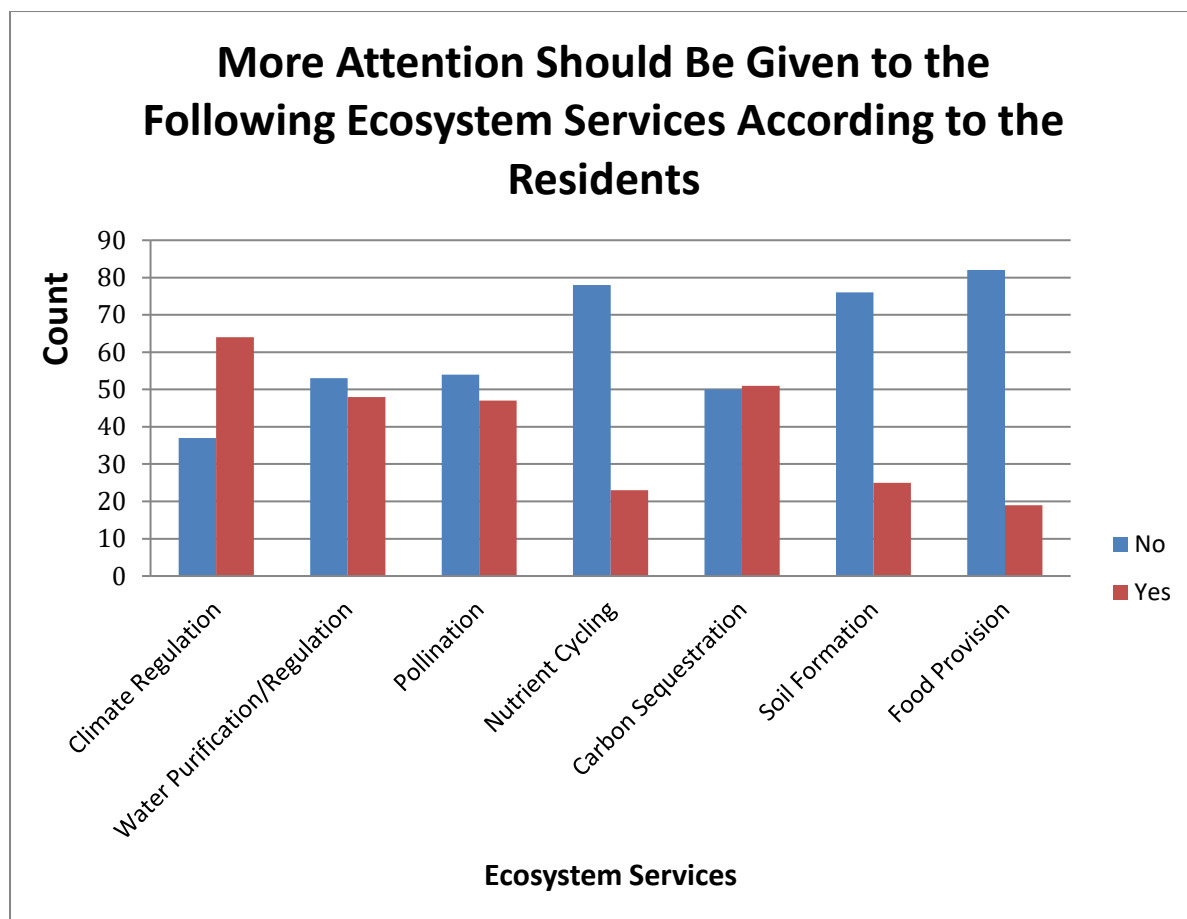


Figure 25: Count of the importance of each ecosystem service according to the residents

Appendix 4 - Tables

What municipality do you currently reside in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Zeist	60	59,4	59,4	59,4
	Leusden	4	4,0	4,0	63,4
	Utrechtse Heuvelrug	9	8,9	8,9	72,3
	Rhenen	3	3,0	3,0	75,2
	Woudenberg	4	4,0	4,0	79,2
	Anders	21	20,8	20,8	100,0
	Total	101	100,0	100,0	

Table 8: counts and percentages of all municipalities of the residents

Alternative municipalities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Utrecht	8	38,1	38,1	38,1
	Bilthoven	1	4,8	4,8	42,9
	Houten	2	9,5	9,5	52,4
	Amersfoort	3	14,3	14,3	66,7
	Stichtse Vecht	1	4,8	4,8	71,4
	De Bilt	2	9,5	9,5	81,0
	Bunnik	2	9,5	9,5	90,5
	Soest	1	4,8	4,8	95,2
	Nieuwegein	1	4,8	4,8	100,0
	Total	21	100,0	100,0	

Table 9: counts and percentages of all the alternative municipalities of 21 residents

	Climate Regulation	Water Purification/Regulation	Pollination	Nutrient Cycling	Carbon Sequestration	Soil Formation	Food Provision
Not At All Important	0	0	0	1	0	0	2
Unimportant	0	0	2	3	1	4	6
Neutral	7	6	8	15	4	22	27
Important	47	45	37	46	34	44	44
Very Important	47	50	52	34	62	30	24
Total	101	101	99	99	101	100	101

Table 10: Count of the importance of each ecosystem service

	Climate Regulation	Water Purification/Regulation	Pollination	Nutrient Cycling	Carbon Sequestration	Soil Formation	Food Provision
No	37	53	54	78	50	76	82
Yes	64	48	47	23	51	25	19
Total	101	101	101	101	101	101	101

Table 11: Count of the attention to each ecosystem service

	Hiking	Enjoying Nature	Meeting Up With Friends/ Family	Walking With Pets	Other	Creative Hobby (Photography, Painting)	Mountainbiking	Running
Count	91	79	31	21	17	15	10	9
Percentage	90,09%	78,22%	30,69%	20,79%	16,83%	14,85%	9,90%	8,91%

Table 12: counts and percentages of the recreational activities of the respondents

To what extent do you agree with ambition 1 (Further conservation, management, and development of nature, landscape and cultural history)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	2,0	2,0	2,0
	Disagree	1	1,0	1,0	3,0
	Neutral	5	5,0	5,0	8,0
	Agree	44	44,0	44,0	52,0
	Strongly agree	48	48,0	48,0	100,0
	Total	100	100,0	100,0	

Table 13: Counts and Percentages of the perceptions of residents on ambition 1

To what extent do you agree with ambition 2 (Increase experience and accessibility: with qualitative route structures, recognisability and appearance, educational programs and suitable recreational facilities)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	6,9	6,9	6,9
	Disagree	13	12,9	12,9	19,8
	Neutral	31	30,7	30,7	50,5
	Agree	37	36,6	36,6	87,1
	Strongly agree	13	12,9	12,9	100,0
	Total	101	100,0	100,0	

Table 14: Counts and Percentages of the perceptions of residents on ambition 2

To what extent do you agree with ambition 3 (Further improve the supervision and enforcement: more effectiveness and efficiency)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	3,0	3,0	3,0
	Disagree	15	14,9	14,9	17,8
	Neutral	34	33,7	33,7	51,5
	Agree	35	34,7	34,7	86,1
	Strongly agree	14	13,9	13,9	100,0
	Total	101	100,0	100,0	

Table 15 Counts and Percentages of the perceptions of residents on ambition 3

To what extent do you agree with ambition 4 (Brand enhancement: Developing Heuvelrug National Park into a strong brand, whereby companies, institutions and residents feel attracted to it. A brand that is visible in the expressions and communication.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	5,9	5,9	5,9
	Disagree	31	30,7	30,7	36,6
	Neutral	41	40,6	40,6	77,2
	Agree	17	16,8	16,8	94,1
	Strongly agree	6	5,9	5,9	100,0
	Total	101	100,0	100,0	

Table 16: Counts and Percentages of the perceptions of residents on ambition 4

To what extent do you agree with ambition 5 (Growing economic basis for nature, landscape and heritage. We want to build a community of parties that will jointly financially support the national park)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	2,0	2,0	2,0
	Disagree	9	8,9	8,9	10,9
	Neutral	38	37,6	37,6	48,5
	Agree	39	38,6	38,6	87,1
	Strongly agree	13	12,9	12,9	100,0
	Total	101	100,0	100,0	

Table 17: Counts and Percentages of the perceptions of residents on ambition 5

To what extent do you agree with ambition 6 (Unique National Park: Working together to expand the borders and strengthening the unique values of the Heuvelrug National Park and gaining national recognition for this)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1,0	1,0	1,0
	Disagree	6	5,9	5,9	6,9
	Neutral	36	35,6	35,6	42,6
	Agree	39	38,6	38,6	81,2
	Strongly agree	19	18,8	18,8	100,0
	Total	101	100,0	100,0	

Table 18: Counts and Percentages of the perceptions of residents on ambition 6