# Citizens contributing to landscape in the Netherlands

Greet Overbeek, Ronald de Graaff & Martijn van der Heide

Greet.overbeek@wur.nl
Ronald.degraaff@wur.nl
Martijn.vanderheide@wur.nl

**Abstract**

With the continuing loss of landscape elements and open space, landscape management is gaining importance in tandem with the design of acceptable private and voluntary financing arrangements. Here, we analyze the awareness, involvement, socio-demographic characteristics and the contribution of citizens regarding the landscape. The contribution of citizens has been classified into three fields of activities. Data analysis is based on a survey among 1.060 inhabitants in and around three designated peri-urban areas in the Netherlands. The results show that these areas are well known, albeit on a limited scale. Most of the stated willingness of the inhabitants to contribute to the landscape has been related with their socio-demographic characteristics and to a less extent with their involvement with the landscape. To increase the willingness of citizens to contribute to the landscape the communication strategy may be improved.

Key words: citizens, financial contribution, (non-)use values and functions, communication, distance, landscape

# 1. Introduction

In the Netherlands, the contribution of citizens to the maintenance and development of their everyday landscape has become an issue of increasing interest in spatial and landscape development. Citizens are an important group of private actors, especially those who may enjoy the landscape such as inhabitants living within of nearby the considered landscape. Despite the expansion of academic research on the physical characteristics of landscape, socio-economic issues are lagging behind. This apparent lack of research impedes understanding of the social dimensions of landscape and prevents us from grounding its governance upon a scientific base (Turpin & Oueslati, 2008).

Areas include a wide range of amenities like cultural landscapes of outstanding scenic beauty or with high natural value, and settlements with a rich history and architectural heritage. These landscape amenities may meet the living conditions of the inhabitants and the recreational and leisure needs of urban dwellers and tourists. However, landscapes are continuously changing and evolving though natural and human induced processes and activities. The European Landscape Convention defines landscape as “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”. A society continuously builds on the area it lives upon. Due to population growth and changes in lifestyles, demands for land, water, wood, forage and other natural resources has gone up substantially. As a result, landscapes change rapidly, due to changes in world food and fibre market, urbanization and adaptation to climate change. The consequence of this is that landscape amenities and open space are disappearing to an increasing extent. Therefore, in order to preserve (or even to enhance) landscape and open space amenities, measures to maintain landscape quality are essential.

When considering such measures, it is important to realise that, on the whole, landscape amenities have a public good dimension. In economics, this implies that people can usually enjoy landscapes without paying for them. The reason for this is that landscape amenities have the characteristic of non-rivalry, which means that once an amenity is provided to a consumer, it can be made available to other consumers at no extra costs. Moreover, the enjoyment of the landscape by a single actor does not exclude others from this consumption. As a result of this, the role of private funding for the maintenance of landscape is, from a theoretical viewpoint, rather limited. Consequently, public authorities pay for safeguarding and enhancing landscape.

Despite the theoretical arguments that pit against private funding, in practice funding may also originate from private actors, especially if there are incentives to preserve and to protect the landscape. This holds in particular for landscapes, which get an increasing significance for citizens, because they are threatened, have an active preservation management, enhance visitor participation etc.

It may be expected that the willingness of citizens to contribute financially or in kind to landscape amenities will increase when they are more aware of and involved with the landscape nearby their place of residence. The awareness of inhabitants may increase due to the use of information sources such as newspapers and websites. The involvement of inhabitants may increase if they are easily to experience the landscape. Gaining experience can be facilitated by, amongst others, hiking and biking tracks, visitors' centres, festivals, films, debates, restaurants and hotels.

To increase the knowledge about the willingness of citizens to contribute to the landscape, we explore their attitudes and distance towards the landscape. An attitude of a person towards an object is build up of three components: cognitive, affective en behavioural. The concept of an attitude is often used in the communication and marketing

of goods and services. It seems reasonable to assume that the contributions of the inhabitants to landscape management decline with the increasing distance of the place of residence from the area. This may be true for 'human' or in kind contributions, such as physical services of certain types (e.g. volunteers who cut willows) but not necessarily for financial contributions. This is mainly because landscapes have not only a use value for inhabitants and tourists who enjoy private benefits, but also a non-use value for citizens who consider it a public good. We come back to these issues within our theoretical analysis presented in section 2.

In order to design acceptable financing arrangements for private actors, it is crucial to understand the demand for alternative approaches to landscape management. This paper will serve as a basis by exploring the willingness of Dutch citizens to contribute in the landscape within their living and working area. We empirically explore the effects of geographic distance to the designated area, the awareness and involvement in the landscape on the willingness of inhabitants to contribute to the landscape. Although we collected data from inhabitants, in reality we consider them not only as residents, but also as citizens with more values and interests than only their private ones. Our treatment is guided by the following questions:

- Can relationships between the geographic distance of the respondents and their awareness and involvement to the landscape be identified?
- Can relationships between the geographic distance of the respondents and the financial contributions to the landscape be identified?
- Can relationships between the socio-demographic characteristics of the respondents and the financial contributions to the landscape be identified?
- Can relationships between the awareness, involvement and the financial contributions of the respondents to the landscape be identified?

The organization of this paper is as follows. Section 2 provides some main theoretical considerations and literature review that provide a guidance for our empirical work. In three subsections, we pay particular attention to the communication and marketing, the issue of geographical distance, and the various activities through which people may contribute to the landscape. Next, section 3 outlines the methodology employed in our research. It provides some background information on the study areas and describes the survey, with special attention given to the research samples, questionnaire design and survey administration. The results of the survey, and their analysis are presented in section 4. Finally, section 5 contains discussion and conclusions.

## 2. Theoretical background and literature review

### *2.1 Communication and marketing*

In order to understand the decision making process of inhabitants to contribute to the landscape, we borrow some theoretical considerations about consumers as potential users of a specified product or service. In their decision process several factors play a role (Kraus, 1995; Ajzen, 2001). The attitudes of consumers form often the starting point. An attitude is a learned predisposition to behave in a consistently favorable or unfavorable way with respect to a given object (Ajzen & Fisbein, 1974). The assumption is that if a consumer has a positive attitude towards a specific (landscape) product or service he or she will be more likely to buy and to contribute to this (Ajzen, 2001). However, empirical studies show that also individual and situational characteristics (e.g. perceptions, values, availability, effectiveness) play an important role in those decision

processes (Vermeir & Verbeke, 2007). Therefore in the methodology section we will explain the use of socio-demographic variables and we will describe the situational characteristics of the study area.

The structure and composition of an attitude consists of three components: cognitive, affective part, and behavioral. The cognitive component captures a consumer's knowledge and perceptions (i.e., beliefs) about products and services. Often consumers hold a number of beliefs and each of them reflects knowledge about an attribute of the product or service. Many beliefs are evaluative in nature, such as for landscape the necessity to preserve the landscape with the contributions of private actors. The affective component focuses on a consumer's emotions or feelings with respect to a product or service. Evaluative in nature, the affective component determines an individual's overall assessment of the attitude object in terms of some kind of favorableness rating. Most beliefs have associated affective reactions or evaluations and beliefs are subject to situational influences. The behavioral or conative component is concerned with the likelihood that a consumer will act in a specific fashion with respect to the attitude object. In marketing and consumer behavior, the conative component is frequently treated as an expression of the consumer's intention to buy.

Marketers attempt to change all the components of consumers' attitudes in order to influence the decision making process (Kotler & Armstrong, 2008). Strategies to change the cognitive component are pointed to change the beliefs about the attributes of the product or service. Strategies to change the affective component are directed to increase consumers' liking of a product or service without directly influencing beliefs or behaviour. Increased liking leads to more positive beliefs leads to purchase behaviour (when the need arises). Strategies to change the behavioural component of an attitude are directed to inducing consumers to purchase behaviour, make it rewarding, and lead to repurchase behaviour. Marketing strategies are mostly applied at goods and services with a private benefit for the consumer, but also for non profit or charity goods and services the aim is to change the attitude to stimulate giving behaviour (Mort, 2006; Andresen, 2006).

In our study we explore the cognitive component as the awareness of the area among inhabitants, the affective component as their involvement with landscape and behaviour as their (intended and actual) contribution. The assumption is that a high awareness and involvement will stimulate a contribution of inhabitants. A high involvement may be based on both negative and positive beliefs about societal changes concerning the landscape without private contributions.

### *2.2. Geographical distance*

Geographical distance is expected to be an important factor determining the financial contributions of citizens to landscape management. In many economic treatments, however, distance is ignored, which is reflected in the fact that transport costs are zero.

In their interesting papers, Hanley et al. (2003) and Bateman et al. (2006) consider thoroughly the spatial distributions of values – and thus also of contributions – for some open access, public good resources (e.g. landscape). The central approach in both papers can be boiled down to the 'distance decay effect', a term which is used to refer to "the phenomenon whereby the mean value placed on a given environmental improvement falls, the further away an individual lives from this improvement" (Hanley et al., 2003, p. 298). Although it is expected that the financial contributions held by those who are presently users of the landscape will decline as distance from that landscape increases, there are, as Bateman et al. (2006) note, a number of complicating issues here. These issues are mainly related to the fact that a distinction can be made between use and non-

use values. Before we delve into the link between use and non-use values at the one hand and distance at the other, it would be sensible to clarify what is meant by the concepts of use values and non-use values.

Use values refer to the actual use of landscapes in consumption and production activities. They are concerned with the enjoyment and satisfaction received by consumers of the landscape. The use and enjoyment of the landscape can take place through, for example, hunting, fishing, recreation, tourism and agriculture. In general, use values are conceptually clear and offer the best chance of being measurable. After all, they can be marketed, resulting in a market that signal the (true) scarcity of the asset.

In addition, non-use values involve no tangible interaction between the natural asset and the people who benefit from it. Because non-use values are closely linked to ethical concerns and altruistic motives, they are more amenable to debate than use values. Probably the most important non-use values are bequest values, philanthropic values, and existence values. Bequest value is a willingness to pay to keep a natural asset intact for the benefit of one's descendants, or more generally, future generations. Philanthropic value results from individuals placing a value on the conservation of natural assets for contemporaries of the current generation to use (Turner et al., 2000). Existence value involves a subjective valuation as it is based on the satisfaction that individuals experience from knowing that a certain natural asset exist, for themselves and for others, without being used now or in the future (Barbier, 1995; Wills, 1997). Empirical estimates, obtained through questionnaires, suggest that existence value can constitute a substantial component of non-use values (Moran & Pearce, 1997; Alexander, 2000).

Users of the landscape will hold use values and may well hold non-use values. Hence they may act as a resident, and more broader as a citizen. Non-users, on the other hand, do not hold use values. Therefore, according to economics it seems reasonable to assume that users will typically pay higher financial contributions to the landscape than non-users. But this still leaves us with the question if it can be expected that contributions will decline as distance from the landscape under consideration increases. For use values, benefits usually diminish with distance. Hence, the willingness of users of landscape amenities to contribute for maintaining it is expected to decline with distance. But for non-use values, however, there is, as Hanley et al. (2003) write, no reason to expect that non-use values are subject to a distance-decay effect.

In this paper, we try to shed some empirical light on distance decay effects. Revealed preferences measure only use values. By using an approach based on stated preferences, we are capable to estimate both use and non-use values. Further, we require less data to estimate the values. Contributions are being estimated directly by asking individuals questions about their maximum willingness to pay for a desirable level of landscape amenities or their minimum willingness to accept compensation to forgo change in these amenities. Using questionnaires, which simulate the market, is the essence of stated preference approaches. However, the stated preferences may be more hypothetical than real and some values may be over estimated (Visser & Van Dam, 2006).

### *2.3 Contributions of citizens to the landscape*

In sociological research, the contribution of citizens to the landscape is broader defined with more activities than just an amount of money they would like to pay. In order to analyse their contribution , it is helpful to classify the numerous activities that citizens can undertake to enhance the protection and preservation of the landscape (Overbeek & Vader, 2008). The activities may be both financial, and physical or mental. The contributions of citizens can be classified into three fields of activity. These are the:

1) Protector for providing financial contributions and physical activities for the landscape; examples of financial contributions are memberships and donations to protection organisations for nature and landscape; examples of physical activities are cutting willows, counting and preserving landscape elements etc.;
2) Consumer for using products and services of the landscape and paying (more) for its use; examples of financial contributions are paying more for houses and regional products to enhance the landscape, paying park entrance or tourist tax; examples of physical activities are recreation and gardening etc;
3) Voter for giving priority to the landscape in the local policy and paying more tax to enhance the landscape; examples of financial contributions are the willingness to pay more tax to enhance the landscape; examples of physical activities are participation in local landscape policy, voting on a political party that gives priority to landscape etc;

While the activities in the field of the Protector and the Voter are more often characterised by non-use values, the activities of the Consumer are mainly based on use values. Thus, while the citizen who is performing activities as a Protector or a Voter is not the only one who is benefitting from it, the citizen acting as a Consumer will get the main benefits themselves. Concerning the financial activities in each field, it implies that the influence of distance, which is mainly relevant for use or individual values, should be more visible in the field of the Consumer and less in the field of the Protector and the Voter.

## 3. Methodology

### *3.1. Study areas*

This study is part of a longer project to understand the process of developing financial arrangements to examine the benefits of the landscape for which citizens are willing to pay (Overbeek & De Graaff, 2009). Therefore, the Dutch Ministry of Agriculture, Nature and Food Quality has designated areas in which regional and local parties have proposed plans for generating private resources for developing a more beautiful landscape (ANF, 2008). They are Amstelland, Binnenveld, Het Groene Woud and Ooijpolder-Groesbeek.[1] Amstelland is a peat meadow area south of Amsterdam in the western part of the Netherlands. The Binnenveld is a valley area in the middle of the Netherlands. Ooijpolder-Groesbeek is located east of Nijmegen nearby the German border and includes both a river foreland area and a hilly area.

Each designated area includes a surface of about 5.000 hectares (Table 1). The number of inhabitants are different. While the number of inhabitants inside the areas are quite similar, the number of inhabitants located within a distance of around 5 km of the area are quite different. Amstelland has more inhabitants outside living in the neighbouring cities (such as Amsterdam, north of the area and Amstelveen, west of the area) than the Binnenveld, which is the central hart based on the outskirts of four surrounding cities (Wageningen, Ede, Rhenen and Veenendaal) and Ooijpolder-Groesbeek with just one city (Nijmegen, west of the area) outside.

[1] For the objective of this paper the fourth designated area Het Groene Woud with a larger surface of 35.000 hectares has been excluded.

| Table 1 | Characteristics of the three designated areas | | |
|---|---|---|---|
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| Location in the Netherlands | Western part | Central part | Eastern part |
| Main cities | South of Amsterdam | Within four cities | East of Nijmegen |
| Area in hectares | 4.000 | 5.000 | 6.000 |
| Citizens in and around the area | 375.000 | 140.000 | 160.000 |

In the former section, it has been mentioned that the situational characteristics of a study area play an important role in the decision process of citizens. In the context of the increasing distance between inhabitants and landscape, their awareness, involvement and their contributions could be expected to be dependent of the communication strategy and the local landscape development policy as well. In Amstelland, the organisation of protectors of the area has developed some communication issues, with among others a visitors day in June, a website, a digital newspaper. The protector organisation is based on volunteers and has one thousand members, mainly inhabitants nearby. In the Binnenveld, the four involved cities have developed a common landscape development plan. In Ooijpolder-Groesbeek, there is both a communication strategy and a landscape development plan. Further, in this area there are opportunities to participate in a public sale (auction) of protection for landscape elements, both digital (www.groenedoelen.nl) and physical (the first auction was in 2007). The Ooijpolder-Groesbeek area is a well-known recreational area. It is also nationally known for outdoor mega events like the Seven Hills run and the world's biggest International Four Days Marches of Nijmegen, which attracts hundred thousands of athletes and visitors.

### *3.2. Research samples, questionnaire and data analysis*

The study utilised three representative samples of inhabitants between 20 and 75 years of age. Respondents were recruited by an internet panel of 200.000 members of the Dutch marketing research organisation TNS NIPO. In October 2008 TNS NIPO contacted a random representative sample according to the regional population register in terms of age, education and gender by internet. Each potential respondent was given an introduction to the designated area and asked if he or she would complete a mail questionnaire. The data collection required two weeks, including one remind.

Although there may some discussion about the extent members of an internet panel may cause some self-selection and thus a bias in the response, TNS NIPO has tried to avoid this by providing facilities to population segments that use internet less often. Besides this, 90% of the adult population in the Netherlands has access to internet, which is also the highest number in Europe (Eurostat, 2009). Moreover, the respondents will get some euro's for the time invested. Therefore, it may be more important to discuss the other side of the coin, which is the high net response rates compared to postal or oral questionnaires. The advantage of this is that more people are included who are not positively biased about the research subject.

The questionnaire contained questions about the place of residence experience with the area, and involvement with landscape and landscape policy. The main sections are about the landscape activities done and the interest to contribute financially to certain activities. Some questions will deal with the contributions already done, other questions will focus on the preferences for certain contributions. The contributions are mainly about the type of activity and not about the amount of payments. The average time to answer the questionnaire was a quarter of an hour. More detailed information about the survey can be found in the report (Overbeek & De Graaff, 2009).

In the case of the Protector the financial contributions are the current memberships and donations to protection organisations for nature and landscape. Regarding the Consumer the financial contributions deal only with the stated preferences for contributions by certain actors who take advantage of the added value of the landscape (inhabitants, tourists, commercial and tourist enterprises, project developers). Finally, in the case of the Voter, citizens will stated their willingness to pay more income tax and by using more council tax (Immovable Property Tax) for landscape purposes.

Many socio-demographic characteristics of the respondents were already available from the TNS NIPO panel and did not have to be asked. For this analysis the most important ones are age and education.

The statistical analysis of the data is mainly based on bivariate analyses, predominantly crosstabs for ordinal data and compare means for interval data. Most of the interval data have been based on a 5-points scale. The power of statistical testing will be indicated by * ($p < 0.05$), ** ($p < 0.01$) and *** ($p < 0.001$).

### *3.3 Response*

The data collection resulted in totally 1,060 citizens in and around the three designated areas who completed the questionnaire. The net response rates varied from 72% to 76% (Amstelland: 372 respondents, 76%; Binnenveld: 335 respondents, 72%: Ooijpolder-Groesbeek: 353 respondents, 76%). In order to get a representative response according to the research sample the answers have been weighted for education.

The response (research sample) of Amstelland has more older citizens, higher educated and more women, while the Binnenveld has more younger inhabitants, less educated and more men (Table 2). The socio-demographic characteristics of the inhabitants of Ooijpolder-Groesbeek are in between of those in the other two designated areas. In terms of geographic distance, the inhabitants of Amstelland more often live in or less than 2 km from the designated area (63%), while the inhabitants of Ooijpolder-Groesbeek more often live more than 5km from the designated area (47%). The geographic distance of the inhabitants in the Binnenveld are in between of the other two designated areas.

| **Table 2** | **Response in the three designated areas** | | |
|---|---|---|---|
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| Socio-demographic characteristics | | | |
| Age: 55 years and older | 31% | 27% | 28% |
| Education: tertiary level | 40% | 27% | 37% |
| Gender: female | 55% | 52% | 52% |
| Distance | | | |
| 0 – 2 km | 63% | 35% | 17% |
| 2 – 5 km | 25% | 47% | 36% |
| > 5 km | 12% | 18% | 47% |
| Total | 100% (N=372) | 100% (N=335) | 100% (N=353) |

## 4. Results

### *4.1 Awareness of the landscape*

The designated areas Amstelland, Binnenveld and Ooijpolder-Groesbeek seem to be well known to respondents who live in or close to the area (Table 3). The awareness is mainly

based on proximity and this awareness decreases when respondents live further away. The biggest difference is in Amstelland, where many inhabitants from Amsterdam are not aware of the area. However in Ooijpolder-Groesbeek, the designated area with a more developed communication and landscape policy, the inhabitants of Nijmegen are well aware of their hinterland. In tandem with this, it seems that the use of information sources about the landscape is also negative related with the distance to the designated area. Information sources about the landscape that are quite vulnerable for the distance to the area are notice boards within the area and local newspapers. If the distance increases, the use of those information sources decreases significantly.

| **Table 3** | **Awareness of the areas and use of information sources related to distance** | | |
|---|---|---|---|
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| Distance | **Well aware of the area** | | |
| 0 – 2 km | 50% | 47% | 69% |
| 2 – 5 km | 29% | 32% | 75% |
| > 5 km | 6% | 19% | 65% |
| Average | 39%*** | 34%*** | 69%*** |
| | **Use of information sources about landscape** | | |
| 0 – 2 km | 68% | 63% | 74% |
| 2 – 5 km | 60% | 60% | 66% |
| > 5 km | 32% | 44% | 56% |
| Average | 63% *** | 58% | 63% ** |
| | **Average use of several information sources** | | |
| Notice boards | 27%*** | 23% | 30%*** |
| Local newspapers | 34%** | 30% | 30% |
| Websites | 8% | 5% | 15% |
| *** p < 0.001; ** p < 0.01 | | | |

## *4.2 Involvement with the landscape*

We have measured the involvement of citizens with the landscape both by positive and negative emotions and feelings. Positive emotions and feelings are related to the personal attachment with the landscape and its perceived attractiveness negative emotions and feelings are related to worries about the future of landscape and feeling that the municipality should do more to protect the landscape.

Citizens feel to have strong ties to the area and find the landscape to be inviting (except for the Binnenveld). Ooijpolder-Groesbeek is the most appreciated (Table 4).[2] In all areas we see the attachment to the landscape decreasing with more distance. Except for the Binnenveld the perceived attractiveness of the landscape is also negatively related with distance. This implies that the attachment and the perceived attractiveness is mainly based on neighbourhood. It seems that both the worries and the belief that the municipality should do more to protect the landscape are not related with distance (Table 4). This implies that, while the positive emotions and feelings are strongly related with distance, the negative ones are more independent of distance. Most citizens judge the changes in the landscape in their area being neutral or an improvement and are not overly worried. Comparatively, in Amstelland and the Binnenveld they see more of a deterioration then in Ooijpolder-Groesbeek. Therefore, the citizens in Amstelland and the Binnenveld are

[2] In order to present the results in a comparative way we have left the SD of the results in Table 4a,4b,5,6 &7. Further, if there are not significant relationships wit distance, only the average will be mentioned.The total numbers are similar to the N reported in Table 2. In case there are missing values, they have been replaced with the mean value.

more worried. In terms of the landscape policy, in all areas citizens feel that local municipal councils should do more to protect their landscape.

| Table 4 | Involvement with the landscape (5-scale; increasing) | | |
|---|---|---|---|
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| Distance | **Mean attachment to the landscape** | | |
| 0 – 2 km | 3.9 | 3.7 | 4.3 |
| 2 – 5 km | 3.6 | 3.5 | 3.8 |
| > 5 km | 3.1 | 3.2 | 3.5 |
| Average | 3.7*** | 3.5*** | 3.7*** |
| | **Mean attractiveness of the landscape** | | |
| 0 – 2 km | 4.0 | 2.6 | 4.5 |
| 2 – 5 km | 3.8 | 2.7 | 4.3 |
| > 5 km | 3.6 | 2.6 | 4.1 |
| Average | 3.9*** | 2.6 | 4.2*** |
| | **Mean worries about the landscape** | | |
| Average | 2.7 | 2.6 | 2.4 |
| | **Mean belief that municipality should protect the landscape more** | | |
| Average | 3.6 | 3.6 | 3.6 |
| *** $p < 0.001$ | | | |

### *4.3 Contribution of the citizens to the landscape*

In this section we will report the financial contributions of citizens within the three fields of activity (Protector, Consumer and Voter). Firstly, we will describe the financial contributions. Secondly, we will analyse them in relation with distance. Thirdly, we will report briefly about the financial contributions in relation with respective the socio-demographic characteristics and the awareness of and involvement with the landscape in the designated areas.

If we consider the number of active citizens within each field of activity, almost half of them are donors or members of one or more organisations for nature and landscape (Protector). In Amstelland citizens give more frequently than citizens in the other areas.

As users of the landscape (Consumer), most citizens find their area a significant motive for living there (Overbeek & De Graaff, 2009). However, they take this argument sooner for granted if we compare their stated preferences for certain actions. We have asked the citizens about their willingness to support payment actions of five different private actors who may take advantage of their location within a beautiful landscape (inhabitants, tourists, commercial and tourist enterprises, project developers). If we consider the number of citizens who prefer that those actors should pay for the use value, they mainly chose project developers, commercial and tourists enterprises who should pay more often. Hence, near is my shirt, but nearer is my skin, because the preferred actors are others than the inhabitants themselves. There are hardly differences between the preferences of the citizens in the designated areas, excluding the preference for tourists visiting a beautiful area. In recreational well-known Ooijpolder-Groesbeek area they are more often expected to pay.

In the case of the Voter, citizens demonstrate a considerable willingness to contribute financially by using more council tax (Immovable Property Tax) for landscape purposes and by paying more income tax. Nearly half of them is willing to use more council tax for the landscape, more often in Amstelland, while one thirds is willing to pay more income tax for the landscape, more often citizens in Ooijpolder-Groesbeek.

| Table 5 | (preferred) Financial contributions for landscape | | |
|---|---|---|---|
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| **Protector** | | | |
| One or more memberships | 50% | 47% | 44% |
| **Consumer** | | | |
| Project developers | 71% | 71% | 72% |
| Commercial enterprises | 57% | 57% | 60% |
| Tourist enterprises | 56% | 58% | 61% |
| Tourists | 30% | 35% | 42% |
| Inhabitants | 12% | 11% | 15% |
| **Voter** | | | |
| More council tax (Immovable Property Tax) for landscape purposes | 50% | 45% | 46% |
| More income tax | 32% | 31% | 37% |

In order to relate within each field the financial contributions with the distance, we have compared the mean number of (preferred) activities (Table 6). In the case of the Protector, in two designated areas inhabitants further away in the surrounding cities give less often (Amstelland and Ooijpolder-Groesbeek). The opposite holds for the third area (Binnenveld), where the inhabitants further away give more often. Regarding the preferred actions as a Consumer, in all the designated areas citizens support on average two or three actions, independent of their location. In the case of the Voter, in all the designated areas citizens state to support nearly one of the two actions. There are hardly significant relationships between the preferred actions and the distance to the designated area, excluding citizens nearby Ooijpolder-Groesbeek who are more willing to contribute.

| Table 6 | (preferred) Financial contributions for landscape | | |
|---|---|---|---|
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| Distance | **Protector: mean number of memberships or donations for landscape (maximum of 5 contributions)** | | |
| 0 – 2 km | 1.0 | 1.0 | 0.8 |
| 2 – 5 km | 0.7 | 0.7 | 0.9 |
| > 5 km | 0.7 | 0.9 | 0.5 |
| Average | 0.9*** | 0.8*** | 0.7*** |
| | **Consumer: mean number of different actors that should pay for using added value of the landscape (maximum of 5 actors)** | | |
| Average | 2.3 | 2.3 | 2.5 |
| | **Voter: mean number of actions to pay or use more tax for the landscape more (maximum of 2 actions)** | | |
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| 0 – 2 km | 0.8 | 0.6 | 0.9 |
| 2 – 5 km | 0.7 | 0.9 | 1.0 |
| > 5 km | 0.9 | 0.8 | 0.7 |
| Average | 0.7 | 0.8 | 0.8*** |
| *** $p < 0.05$ | | | |

Before, it has been shown that the (stated) financial contributions are hardly related with distance. Therefore, the question is if the relationship with socio-demographic characteristics such age and education is more important. The results show that the financial contribution as a Protector is positive related with age, with older citizens giving

more, while the stated financial contributions as a Consumer and a Voter are more often supported by the higher educated inhabitants (Table 7).

| **Table 7** | **Financial contributions by age and education** | | |
|---|---|---|---|
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| | **Protector: mean number of memberships or donations for landscape (maximum of 5 contributions)** | | |
| Age; 55years and older | 1.3* | 1.1*** | 0.7 |
| Education: tertiary level | 1.1 | 1.0* | 0.7 |
| | **Consumer: mean number of different actors that should pay for using added value of the landscape (maximum of 5 actors)** | | |
| Age; 55years and older | 2.1 | 2.1 | 2.3 |
| Education: tertiary level | 1.5*** | 2.4 | 2.7** |
| | **Voter: mean number of actions to pay or use more tax for the landscape more (maximum of 2 actions)** | | |
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| Age; 55years and older | 0.5 | 0.5 | 0.6 |
| Education: tertiary level | 0.5*** | 0.6** | 0.7*** |
| *** p < 0.001; ** p < 0.01; *p < 0.05 | | | |

Further, if we relate the (stated) financial contributions with the awareness of and involvement with the designated areas, the relationships are even stronger. The results show that the financial contribution as a Protector is strongly positive related with the awareness, attachment and worries of the respondents in all areas (Table 8). The stated financial contributions as a Consumer are only more often supported by citizens who feel themselves attached to its landscape. As a Voter in nearly all areas respondents who are aware, attached and worried are more often willing to pay or use more tax for the landscape in their area.

| **Table 8** | **Financial contributions by awareness and involvement** | | |
|---|---|---|---|
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| | **Protector: mean number of memberships or donations for landscape (maximum of 5 contributions)** | | |
| Awared | 1.2** | 1.2*** | 0.8** |
| Attached to the landscape | 1.0*** | 1.1*** | 0.9*** |
| Worried about the landscape | 1.6*** | 1.6*** | 1.3* |
| | **Consumer: mean number of different actors that should pay for using added value of the landscape (maximum of 5 actors)** | | |
| Awared | 2.5 | 2.3 | 2.5 |
| Attached to the landscape | 2.5*** | 2.5*** | 2.6*** |
| Worried about the landscape | 3.1*** | 2.0 | 3.0 |
| | **Voter: mean number of actions to pay or use more tax for the landscape more (maximum of 2 actions)** | | |
| | **Amstelland** | **Binnenveld** | **Ooijpolder-Groesbeek** |
| Awared | 0.9 | 1.0*** | 0.9*** |
| Attached to the landscape | 0.9*** | 1.0*** | 1.0*** |
| Worried about the landscape | 1.3*** | 1.1*** | 0.9 |
| *** p < 0.001; ** p < 0.01; *p < 0.05 | | | |

### *4.4 Relation between awareness, involvement and contribution*

Before we have analysed that the citizens' awareness of the designated area is negatively related with distance. Further, while the positive emotions and feelings about landscape are strongly related with distance, the negative ones are more independent of it. Awareness of the area and worries about its future may help the contributions as a Protector and a Voter, while the attachment to the area is positively related to all contributions. Further older citizens more often contribute as a Protector, while higher educated are most willing to contribute financially as a Voter and to a less extent also as a Protector and a Consumer.

The question is to which extent these characteristics are related with each other and have a strong relationship with the (stated) financial contributions. With an ordinal regression we analysed the relevance of age, distance and education and the mean awareness, worries and attachment of the citizens in each designated area. Dummies have been created for age (55 years and older), distance (> 5 km) and education (tertiary level). We analysed them respectively for a contribution as a Protector (at least one membership or donation), a Consumer (a preference for at least three contributions of private actors stated) and a Voter (a preference for at least type of one tax payment stated).

The results show that for a contribution as a Protector predominantly age and education are relevant, with older and tertiary educated citizens more often being a member or a donor. Education and attachment to the area are the most significant variables for a contribution as a Consumer and a Voter, with tertiary educated citizens and more attached citizens who prefer more contributions.

## 5. Discussion and conclusions

The results show that the awareness of the area is strongly negative related with the geographic distance of the citizens, if there has been little communication policy (Amsterdam & Binnenveld). If there has been substantial communication, directly or indirectly related with landscape, the awareness increases and shows that also citizens further away may be aware with the area (Ooijpolder-Groesbeek).

Concerning the involvement of citizens, the stated positive emotions and feelings with landscape are strongly negatively related with distance, while the negative ones are more independent of distance. This difference between the positive and negative emotions and feelings may be interesting for our understanding how use values and non-use values are related to landscape. For the development of communication strategies, it is important to distinguish both type of values. Use values related to landscape seem to be correlated with a favourable rating of a product or service. Contrary to this, non-use values related to landscape seem to be correlated with negative emotions and feelings or a concern.

However, the results do not conform the expectations from literature that the willingness to contribute for use values are more (negatively) related with distance than for non-use values. From the contribution of citizens we did not notice significant relationships between the activities in the field of Consumers and the geographic distance. A explanation for the lack of a distance decay effect in the case of use values may be the evidence of the landscape and the idea that it requires no added contributions. Further, the preferred contributions mainly concern other actors than the inhabitants themselves.

To conclude, most of the (stated) willingness to contribute to the landscape has been related with the socio-demographic characteristics of the citizens' and to a less

extent also with their involvement with the landscape. However, this may be also due to the still weak level of communication and marketing strategies in the designated areas. At the moment, there are hardly instruments that may help citizens who like to contribute financially to the landscape. Therefore, to increase the willingness to contribute to the landscape more attention for the marketing and communication of the landscape is required, especially for citizens living further away from the designated area.

## References


Ajzen, I. (2001). Nature and Operation of Attitudes. *Annual Review of Psychology* , 52: 27-58.

Ajzen, I. & M. Fishbein (1974). Factors Influencing Intentions and Intention-Behavior Relation. *Human Relations*, 1: 1-15.

Alexander, R.R. (2000). Modelling Species Extinction: The Case for Non-consumptive Values. *Ecological Economics,* 35 (2): 259-269.

Andresen, K. (2006). *Robin Hood Marketing: Stealing Corporate Savvy to Sell just Causes*. Wiley, John & Sons.

Barbier, E.B. (1995). Tropical Wetland Values and Environmental Functions. pp. 147-169. In: C.A. Perrings, K.-G. Mäler, C. Folke, C.S. Holling and B.-O. Jansson (eds). *Biodiversity Conservation; Problems and Policies.* Dordrecht-Boston-London, Kluwer Academic Publishers.

Bateman, I.J., B.H. Day, S. Georgiou & I. Lake (2006). The Aggregation of Environmental Benefit Values: Welfare Measures, Distance Decay and Total WTP. *Ecological Economics,* 60 (2): 450-460.

Eurostat (2009). ICT statistics.

Hanley, N., F. Schlapfer, & J. Spurgeon (2003). Aggregating the Benefits of Environmental Improvements: Distance-decay Functions for Use and Non-use Values. *Journal of Environmental Management,* 68 (3): 297-203.

Kotler, P. & G. Armstrong (2008). *Principles of Marketing*. Prentice Hall, 12th ed.

Kraus, S.J. (1995). Attitudes and the Prediction of Behavior – a Meta-Analysis of the Empirical literature. *Personality and Social Psychology Bulletin*, 21: 58-75.

Moran, D. & D. Pearce (1997). The Economics of Biodiversity. pp. 82-113. In: H. Folmer and T. Tietenberg (eds). *The International Yearbook of Environmental and Resource Economics 1997/1998; A Survey of Current Issues.* Cheltenham, UK and Lyme, USA, Edward Elgar.

Mort, G.S. (2006). Nonprofit and voluntary sector marketing: An International Perspective. *International Journal of Nonprofit and Voluntary Sector Marketing,* 11: 267–270.

Overbeek, M.M.M. & J. Vader (2008). *Genieten van landschap en ervoor zorgen.* Den Haag, LEI Wageningen UR, Rapport 7.08.01 (In Dutch).

Overbeek, M.M.M. & R.P.M. de Graaff (2009). *Investeren in landschap; bewoners en bedrijven in Amstelland, Binnenveld, Het Groene Woud en Ooijpolder-Groesbeek*. Den Haag, LEI Wageningen UR, Rapport 2009.014 (In Dutch).

Turner, R.K., J.C.J.M. van den Bergh, T. Söderqvist, A. Barendregt, J. van der Straaten, E. Maltby & E.C. van Ierland (2000). Ecological-economic Analysis of Wetlands: Scientific Integration for Management and Policy. *Ecological Economics,* 35 (1): 7-23.

Turpin, N. & W. Oueslati. (2008). 'Editorial: Landscape in the dynamics of local economies.' *Landscape Research,* 33 (3), pp. 259-262.

Vermeir, I. & W. Verbeke (2006). Sustainable Food Consumption: Exploring the Consumer "Attitude – Behavioral Intention" Gap. *Journal of Agricultural and Environmental Ethics*, 19: 169-194.

Visser, P. & F. van Dam (2006): *De prijs van de plek. Woonomgeving en woningprijs*. Rotterdam/Den Haag, NAi/RPB.

Wills, I. (1997). *Economics and the Environment; A Signalling and Incentives Approach.* St. Leonards, Allen & Unwin.