



Reforming the institutional structure of Agri-Environmental Schemes: The role of transaction costs

Mariëlle van der Veen

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Mariëlle van der Veen

Registration number: 900911856130

Supervisor:

Dr. J.H.M. (Jack) Peerlings

Examiner:

Dr. L.K.E. (Liesbeth) Dries

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Development Studies

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PREFACE

In June 2013 I remember me enjoying breakfast at my room while reading the news that State Secretary Sharon Dijksma had presented a plan to reform the system of agricultural nature conservation. Now, a year later, I have finished my research on exactly that subject.

I have written this thesis within the chairgroup Agricultural Economics and Rural Policies, as part of the master program International Development Studies. I have gained a lot of new knowledge about economics within the last two years. Within this research I have combined my knowledge about economics with my background in social studies.

Writing my thesis was a process with ups and downs. Because during the research it became clear that the rollout of the reform lagged behind, I had to adjust my research at every step. This process has taught me about the relationship between theory versus practice, and policy versus practice. Thereby, due to the subject of study I have gained insight in the whole bureaucratic world behind one meadow-bird in the air. And you may believe me when I say that I never look at one godwit anymore without thinking about all the paperwork associated with it.

I would like to thank my supervisor Dr. J.H.M. Peerlings for his extensive feedback, support on the writing process and clear suggestions. His feedback gave me the confidence to continue writing with a clear vision on the end product. My appreciations are for Alex Datema (Boerennatuur) and Gerbrand van 't Klooster (LTO Noord), who have made time in their busy schedule to talk with me extensively about the research objective.

Mariëlle van der Veen,

Sauwerd, June 2014

EXECUTIVE SUMMARY

Agri-environmental schemes (AESs), a part of the Common Agricultural Policy (CAP) of the European Union, are a tool to promote landscape protection and the delivery of biodiversity by farmers on agricultural land. In 2016, the Dutch government introduces a new institutional structure to regulate AESs, which they assume to be more effective in ecological terms as well as more efficient in economic terms.

To examine if the new structure will be more efficient, more insight is needed in the transaction costs. Transaction costs are the costs of transferring one good from one actor to another, excluding the costs of the product and production (Niehans, 1971). These transaction costs can be divided into three components, namely (1) search costs, (2) design costs and (3) monitoring costs (Groenewegen et al., 2010). Therefore, the research objective is to identify the different private and public transaction costs in the 'old' and 'new' institutional structure of AESs in the Netherlands and determine their causes.

Methods used are a literature study, and a case study within the North-West of the province of Groningen. To get the required information semi-structured in-depth interviews are held with the stakeholders G. van 't Klooster from LTO Noord and A. Datema from Boerennatuur. The focus of the study is on meadow-bird conservation.

The most important difference between the old and new structure of the AESs is that the responsibility for the contracts with the farmers shifts from the government towards agri-environmental collectives, which are groups of farmers within a specific region. This means that at the one hand the collective will have one contract with the province, who will provide the subsidy to deliver the public good 'agricultural biodiversity'. At the other

hand, they will have individual contracts with farmers. This implies also that collectives will be responsible for searching contract partners, distributing the subsidies and monitoring the contracts.

The choice for this new governance structure is determined by transaction costs that in turn are influenced by uncertainty, asset specificity and frequency. Transaction costs of the government are called public transaction costs, the transaction costs of the contracting actor are called private transaction costs. In the old structure the province bears the public transaction costs and the farmers, with support of the collective, the private. In the new structure this division is more diffuse.

In the old structure, the frequency of contracts led to low design costs for the government, however, these contracts are not effective. Also monitoring costs are high, because of high uncertainty between the government and farmers. In the new structure, the government has only one contract with the collective, for which they both have to bear design costs.

Next to that, the collective will have several contracts with the individual farmers. For these contracts the collective will have to bear search costs, but these costs are not expected to be large. Also it has to bear design costs, where design is expected to become better adjusted to specific situations. This, in combination with a smaller executive body, implies lower frequency, and therefore higher design costs. Monitoring costs are expected to become lower, because of trust between the collective and the farmers, and a higher social control between the farmers. The difference for the farmers is that they will have to execute their administrative tasks with regard to AESs themselves, a task initially executed by the collective.

The most important opportunity for the efficiency of the new structure is the expectation that farmers are more intrinsically motivated. The most

important threat is that the relationship between the province and the collective will become unbalanced.

The conclusion drawn within this thesis is that the private transaction costs for farmers hardly change. The level of public transaction costs is much lower in the new structure, and will consist of design costs and monitoring costs. The level of these costs will mainly depend on the level of trust towards the collective. Because of the changing responsibilities, the transaction costs for the collective will increase, most and for all the design and monitoring costs. Overall, the design and monitoring costs may become lower than in the old structure because of higher trust, while the design costs may become higher because of lower frequency.

The crucial factor of making the new structure work out in practice is that the relationship between the province and the collective will be in balance. When the province and the collective act as competitors instead of cooperative partners, not only the efficiency of the new structure will be threatened, but also the effectiveness. The most important advantage of this new structure is that it will function bottom-up. However, the responsibilities the collective will have and the benefits of economies of scale require a certain professionalism of the collective. A good balance between the sense of ownership which farmers should have and the level of professionalism the collective needs to have is another crucial factor for the new structure to succeed in becoming more efficient.

This research can be used to as a stimulus to think about ways to optimize the new structure. Therefore, a recommendation for further research is to focus on a part of the whole structure in more detail and search for ways to make this part more efficient.

CONTENT

Preface	iii
Executive summary	iv
1. Introduction	1
2. Agri-environmental schemes	5
2.1. Background	5
2.1.1. Common Agricultural Policy	5
2.1.2. Basic principles AESs	6
2.1.3. The 'old' institutional structure	7
2.1.4. The 'new' institutional structure	8
2.2. Stakeholders	9
2.2.1. European Union	9
2.2.2. National government	10
2.2.3. Province	10
2.2.4. Agri-environmental collectives	11
2.2.5. Individual farmers	12
3. Transaction costs	13
3.1. Public goods	13
3.2. Transaction costs	14
3.3. Governance structure	18
4. A case-study: North-West of Groningen	19
4.1. Collective organization	19
4.1.1. Governance structure	19
4.1.2. Subsidies	19
4.1.3. Transition costs	20
4.2. Private and public transaction costs	21
4.2.1. Old institutional structure	21
4.2.2. New institutional structure	22

4.3. Stakeholders.....	23
4.3.1. Province	23
4.3.2. Collective	24
4.3.3. Individual farmers.....	27
5. Opportunities and bottlenecks.....	29
5.1. Liberty to act	29
5.2. Motivation farmers.....	30
5.3. Overhead costs collectives	32
6. Conclusion and discussion	35
6.1. Conclusion	35
6.2. Discussion	36
References.....	39

1. INTRODUCTION

Background & problem analysis

In recent decades the role of the environment within the Common Agricultural Policy (CAP) of the European Union has gained importance. Started as a policy to stimulate productivity and support farm incomes, in the early 90's a shift took place towards a focus on economic competitiveness and environmental sustainability. As part of the second pillar since 1992 European member states are committed to use agri-environmental schemes (AESs) as a tool to promote landscape protection and the delivery of biodiversity by farmers on agricultural land. In June 2013 the CAP was reformed for the last time, with the aim to strengthen the economic and ecological competitiveness of the agricultural sector. As part of this reform the structure of AES will be changed.

From 2016 onwards, the intention of the Dutch national government is to implement the following change: agri-environmental collectives develop a plan for a certain region according to the guidelines of the province in which the region is located. They have to discuss these plans with the province which has to approve the plan after which the collective will get a subsidy. From that point onwards, the collective is responsible for the distribution of the money and the monitoring of the contracted farmers.

The new policy is assumed to be more effective in ecological terms as well as more efficient in economic terms. A main critic on the contemporary institutional structure is that there are large overhead costs at the public administrative level: 40% of all the money meant for AESs is spent on public transaction costs. The question is whether the new institutional structure is more efficient than the present structure. In particular, it is important to get

more insight in the public and private transaction costs which belong to both the 'old' and 'new' agri-environmental contracts. Transaction costs are the costs of transferring one good from one actor to another, excluding the costs of the product and production (Niehans, 1971). These transaction costs can be divided into three components, namely (1) search costs, (2) design costs and (3) monitoring costs (Groenewegen et al., 2010).

At this moment, it is of importance for both the Dutch government and agri-environmental collectives to know what the transactions costs are and what the causes for these costs are, in order to be able to minimize these costs in the new institutional structure. So, one wants to make one euro most effective in ecological terms. Because the new institutional structure is not implemented yet, the research will be about the perceived transaction costs and causes instead of actual.

Research objective

The research objective is to identify the different private and public transaction costs in the 'old' and 'new' institutional structure of AESs in the Netherlands and determine their causes. The research will be conducted in the North-West of the province of Groningen.

Research questions

1. What are the main differences between the 'old' and 'new' institutional structure, and what is the role of the different stakeholders within the 'old' and 'new' structure?
2. What are transaction costs, what are the factors determining them and what is the influence on governance structures?

3. Which factors determine the transaction costs in the North-West of the province of Groningen?
4. What are the perceived strengths, weaknesses, opportunities and bottlenecks for the efficiency of the new institutional structure?

Methodology

The research is divided into two parts. To answer research question one and two, a literature study has been carried out to identify the role of different stakeholders in the 'old' and 'new' institutional structure and to identify the transaction costs they face and the factors determining the transaction costs.

To answer research question three and four, a case study has been conducted within the North-West of the province of Groningen. To answer research question three, the purpose of the case study was to give insight in the way different stakeholders perceive transaction costs and the importance of the different explanatory factors. To answer research question four, stakeholders are also asked if they believe that the new institutional structure can change the explanatory factors and their relevance, and with that the transaction costs and the effectiveness of the contracts. To get the required information, semi-structured in-depth interviews have been held with the stakeholders G. van 't Klooster from LTO Noord and A. Datema from Boerennatuur. Unfortunately it was not possible to have an interview with someone from the province of Groningen

To limit the scope of the research, the focus will be on meadow-bird conservation, which is one of the main conservation types in the Netherlands. The main focus of agri-environmental conservation within the North-West of the province of Groningen is on this type of conservation, which makes this region suitable as research area. The choice for one

research area is made because within such a region different institutional factors are the same for all farmers. The advantage of this is that a better comparison can be made between farmers. It is assumed that this advantage outplays the disadvantage of the data being to unilateral. Furthermore, the focus will be on the transaction costs the collectives will bear in the new institutional structure, because no information is available on the transaction costs of the national and provincial government. Finally, it is important to take into account that the research is explorative, and that the results of the interviews are based on the perceptions of the different stakeholders, as the 'new' policy is not implemented yet.

Content overview

First, a description will be given of the 'old' and 'new' institutional structure of AESs in the Netherlands and the role of different stakeholders (Chapter 2). Thereafter in chapter 3, an overview of relevant theories on transaction costs will be presented, and possible factors determining these transaction costs will be identified. Subsequently, an overview of the results of the interviews will be given in chapter 4. In chapter 5 the opportunities and bottlenecks for the new system are presented. Finally in chapter 6, conclusions will be drawn and a critical reflection on the research will be given.

2. AGRI-ENVIRONMENTAL SCHEMES

In this chapter, the old and the new institutional structure for AESs is explained. In section 2.1. the background and the basic principles of AESs are presented. In section 2.2. the role of the different stakeholders within the new and the old institutional structure is analyzed.

2.1. BACKGROUND

2.1.1. COMMON AGRICULTURAL POLICY

The Common Agricultural Policy (CAP) is a policy of the European Union, which has three priorities, namely: (1) a viable food production, (2) sustainable management of natural resources, and (3) balanced development of rural areas throughout the EU (European Commission, 2012a, European Commission, 2012b).

The CAP has two pillars. The first pillar is focusing on the economic support of the farmers and agricultural markets, the second pillar is focusing on rural development. At this moment 70% of the CAP budget is spend on the income support for farmers, 10% is for market support, and 20% of the expenditures are for rural development (European Commission, 2012b). The budget of the CAP is fixed within a financial structure, with a new one starting in 2014 and ending in 2020.

Direct payments are meant to ensure the economic viability of farms. The payments are decoupled from production, which means that farmers receive a fixed sum of income support which is not related to their production. Farmers have to comply to several EU regulations in order to receive these payments. This so-called cross-compliance relates to regulations concerning

food safety, plant and animal health, animal welfare and the environment. From 2014 onwards, this cross-compliance is extended, the so-called 'greening of the CAP'. The greening implies that 30% of the direct income payments of farmers is made conditional on the compliance to one of the following three agricultural measures: (1) maintaining permanent grassland, (2) crop diversification and (3) maintaining an 'ecological focus area' of at least 5% of the arable area of the holding (European Commission, 2013a).

Within the second pillar the overall goal is to maintain a viable countryside by means of supporting both agricultural and non-agricultural projects. Different from the budget for income support, the expenditures of the rural development policy are both paid by the EU and the individual member states. Due to this so-called co-financing, member states can set their own priorities, but they have to spend at least 10% of their budget on strengthening the competitiveness of the agricultural sector, 10% on diversifying the rural economy, and 25% on improving the environment and landscape (European Commission, 2012b; European Commission 2013b).

2.1.2 BASIC PRINCIPLES AESs

To improve the environment and landscape, agri-environmental measures are designed. These measures are voluntarily executed by farmers in return for a subsidy. They are meant to encourage farmers to protect and/or enhance the biodiversity and/or landscape of their farmland (European Commission, 2005).

There are a couple of principles underlying the agricultural environmental policy. The financial principle is that the payment levels should be set at such a level that farmers are encouraged to step in, but they should only compensate for the costs involved by the additional environmental measures farmers undertake (above the mandatory requirements). Principles

concerning effectiveness imply that the AESs are site specific and are supposed to aim for a long-term approach, because of the long lead-in time which results of some measures need (European Commission, 2005).

There are different kinds of agricultural environmental measures, which can be divided into management of productive land and non-productive land measures. Measures related to productive land are for example: input reduction, creating buffer strips, maintaining farming landscapes and maintenance of existing sustainable and extensive systems. Measures to non-productive land are: set aside land, maintenance of abandoned farmland and woodland, maintenance of the countryside and landscape features and public access. The goal of these measures can be subdivided into three subthemes, namely the protection of (1) soil and water, (2) biodiversity, and (3) the landscape (European Commission, 2005).

2.1.3. THE 'OLD' INSTITUTIONAL STRUCTURE

Individual member states are responsible for the way the European agri-environmental policy is implemented. Since 2010, in the Netherlands the policy used is the SNL (Subsidy scheme Nature- and Landscape conservation). The national government formulates a nature and landscape conservation plan for the country as a whole, taking into account the regulations set by the European Union. The individual provinces formulate a region specific nature conservation plan, which has to be coherent with the guidelines of the national government. This plan functions as a directory for the goals, financing, conditions, monitoring and evaluation of the policy. The provinces function as the executive body of the policy (Portaal Natuur en Landschap, 2009).

A component of the nature conservation plan is agricultural nature conservation. In the Netherlands, this component is financed by the program

POP2 (rural development program), and is co-financed by a EU subsidy coming from the 'European Agricultural Fund for Rural Development (EAFRD)'. Goals within this component are: (1) increasing biodiversity, (2) improving the environmental and water conditions, (3) conservation and improvement of valuable cultural landscapes, and (4) a contribution to the international climate objectives (Portaal Natuur en Landschap, 2009).

Individual farmers can subscribe for subsidies in exchange for an agri-environmental service which fits within the provincial nature conservation plan. This means that the contract is an agreement between the individual farmer and the provincial government. Though, most of the subsidy applications are arranged by agri-environmental collectives, which are certified by the province to act as regional supervisor. As supervisor, agri-environmental collectives are responsible for formulating a collective plan for the implementation of agri-environmental conservation measures which are in line with the provincial plan. Agri-environmental collectives get a subsidy from the province to cover their administrative costs (Dienst Regelingen, 2013; Portaal Natuur en Landschap, 2009).

2.1.4. THE 'NEW' INSTITUTIONAL STRUCTURE

From 2016 onwards the system of agricultural nature conservation in the Netherlands will change. The executive power of the policy will be for the largest part at the level of agri-environmental collectives, which are groups of farmers within a specific region. This is in line with the second pillar of the new CAP of the EU (2014-2020). Agri-environmental collectives also have to support the environmental measures within the first pillar of the CAP, the so called 'greening' measures. It is important that these two types of measures complement each other instead of overlap (Portaal Natuur en Landschap, 2013).

The second pillar of the new policy gets shape in the Netherlands by means of a new rural development program called POP3. In line with the European policy, around 30% of the Dutch budget for rural development will be spend on agri-environmental conservation. The European Union has given as guideline for the Netherlands to focus on innovation and sustainability of the future agricultural sector (Regie-bureau POP, 2013; Toekomst GLB, 2013).

Within the new policy, by means of collectives, a bottom-up approach is aimed at. Collectives get the power to develop an innovative and region-specific policy, but also get the responsibility for the execution of this policy. So, the collectives get the responsibility for the distribution of the subsidies, contracting, monitoring and control. The national government and the provinces will have the role of safeguard of the overall agri-environmental policy (Expertgroep Collectieven GLB, 2012).

2.2. STAKEHOLDERS

2.2.1. EUROPEAN UNION

The European Parliament and Council together decide on the budget and the guidelines for agri-environmental policy. Their interest is twofold, at the one hand they want to create a competitive agricultural sector within the EU, on the other hand they want to promote an environmental friendly way of farming in order to prevent environmental degradation. The European Union has legislative power, but not the power to execute policies (European Commission, 2013c).

2.2.2. NATIONAL GOVERNMENT

The policy of the Dutch government with respect to the agricultural environment is part of the overall policy on rural areas called 'Agenda voor Vitaal Platteland (Agenda for Vital Rural Areas)' (AVP). With this policy, the Dutch government is aiming for an economic, ecological and social-cultural sustainable countryside (Portaal Natuur en Landschap, 2009). The Dutch government has a role as translator of EU policy to the national level. The government mainly has a legislative role.

Within the 'new' institutional structure, the Dutch government delegates more power to the provinces. However, the national government stays responsible for the coherency of the agri-environmental policy with other nature-conservation policies on the national level. Therefore, it is important that the national government sets clear policy guidelines for subsidy conditions. In this way, it is clear for the different stakeholders (1) what the goals of the policy in the different regions are, (2) what results and/or measures are expected within different regions, and (3) which stakeholders are accountable for the actions and what the sanctions are if they do not comply to the policy (Expertgroep collectieven GLB, 2012).

2.2.3. PROVINCE

The individual provinces set the goals for their regional agricultural nature plan. In this way, agricultural nature conservation can be specific for the different regions. However, in order to standardize policies and administrative tasks, the freedom of provinces is limited. The individual provinces can decide in what way they want to cooperate with the agri-environmental collectives. In this way, a structure can be chosen which fits the culture and style of work of the individual provinces (Portaal Natuur en Landschap, 2009).

Within the new institutional structure agri-environmental collectives get more responsibilities. This means that provinces function as negotiation partners of these collectives. Provinces only set the structure and general guidelines of the policy. Provinces are responsible for monitoring the collectives. In order to be able to monitor in an efficient way, there have to be clear guidelines and regulations on what is expected from the collectives. The balance between these clear regulations and the freedom of collectives is still unclear at the moment. Some requirements on how to function as a regional manager are already defined for the collectives (Expertgroep collectieven GLB, 2012).

2.2.4. AGRI-ENVIRONMENTAL COLLECTIVES

Within the old institutional structure agri-environmental collectives are associations of cooperating farmers who together support agricultural nature conservation. The collectives can have different interests, of which the most common are: (1) nature and landscape conservation, (2) sustainable and economic vital agriculture, and (3) meadow bird conservation. Therefore, the collectives have the following responsibilities and tasks: (1) stimulate agricultural environmental conservation measures by members, (2) establish cooperation with other regional environmental managers, (3) promote and provide information on agricultural nature conservation, (4) support the relation between farmer and citizens, (5) support agricultural tourism, and (6) establish access for farmers to agri environmental subsidies and finance (Oerlemans et al., 2006). Within this structure, the positive contributions of agri-environmental collectives are the contribution to the design of the provincial plan, the support in the execution of the policy and the assistance to farmers on their administrative burden (Oerlemans et al., 2006).

Within the new institutional structure the agri-environmental collective will be an independent organization. At the one hand they will have one contract with the province about the area-specific agri-environmental plan which the collectives have to draw, and the province has to agree upon. At the other hand, they will have individual contracts with farmers performing agri-environmental nature conservation practices. This implies also that collectives will be responsible for searching contract partners, distributing the subsidies and monitoring the contracts.

2.2.5. INDIVIDUAL FARMERS

Within the old institutional structure individual farmers can subscribe for a subsidy individually. Another more common way for farmers is to apply via an agri-environmental collective. The power of individual farmers is limited. Farmers can only subscribe for a subsidy when the measures they want to implement fit the already written regional plan (Portaal Natuur en Landschap, 2009). Looking at the power of individual farmers from another perspective, they have great power when it comes to preventing plans from failing, because farmers who own plots of land which are crucial for the plan to succeed, can hold-up the provincial plan.

Within the new institutional structure farmers can only apply for subsidy collectively. The agri-environmental collectives consist of farmers, so in that way farmers can have direct influence on the agri-environmental plans for the area in which they farm. This implies also that farmers are dependent on the plans agri-environmental collectives set up and on the distribution of the subsidy they collectively get. So, it can be that certain farmers miss the boat because there is collective agreement that their land is not included in the focus area.

3. TRANSACTION COSTS

In this chapter the theory of transaction costs is discussed. In section 3.1. the concept of 'public good' is explained. In section 3.2. principles of transaction cost theory are discussed. Finally, in section 3.3. the role of governance structures in the light of transaction costs and public goods is exemplified.

3.1. PUBLIC GOODS

A public good is a non-excludable and non-rival good, that is no one can be excluded from consuming the good, nor does the consumption of the good by one person reduces the amount that can be used by others. Agricultural biodiversity is one example of a public good. For example meadow birds, as no one can be excluded from enjoying meadow birds in their surroundings, nor does the meadow bird population decrease when one person watches them. In contrast agricultural land is a private good: the owner of one plot of land has private property rights over that plot, and only one person has the right to make use of it. This means that solely these private landowners (farmers) have the possibility to provide the public good of agricultural biodiversity, but they are not the only one who benefit from it (Cooper et al., 2009; Groenewegen et al., 2010).

Because a public good like 'agricultural biodiversity' can be freely consumed by everyone, there is a problem with financing its provision. People may decide to free ride: there is no direct need for one person to pay for the good, when other people keep paying for it. This becomes a problem when everyone acts in this way, because at that moment there are not enough

financial resources to keep providing this public good. As a public good is not provided by the market, although there is societal demand, the government can intervene. In the case of agricultural biodiversity, this is done by the EU both by means of restrictions (for example on the amount of fertiliser use) as well as through financial rewards (subsidies) (Cooper et al., 2009; Groenewegen et al., 2010). Public goods should be provided by the government if there is no other feasible alternative, the so called 'remediableness' criterion (Williamson, 1999).

On the other hand, the reduction of a public good, like agricultural biodiversity due to intensive farming practices, can be considered as a negative externality. A negative externality is a side-effect of production which affects the society as a whole, but for which no compensation is paid. In this light, the EU restrictions and subsidies for farmers are means to reduce the negative externalities of agricultural land use (Cooper et al., 2009; Groenewegen et al., 2010).

3.2. TRANSACTION COSTS

A transaction is an exchange of property rights from one actor to another. This property can be both tangible and intangible, and transactions can take place across actors (e.g. firms and government) or within actors. With transactions two types of actors are involved, namely the seller and the buyer (Groenewegen et al., 2010). For example, in the case of agricultural biodiversity, the government, representing the society, acts as buyer of the product 'agricultural biodiversity' and the farmer acts as seller of the product (Mettepenningen et al., 2009).

Transactions costs are the costs of transferring one good from one actor to another, excluding the costs of the product and production (Niehans, 1971). Transaction costs are build up out of ex-ante costs and ex-post costs. The ex-ante costs are the costs for obtaining information, the so called search costs. The ex-post costs are both the design costs and the monitoring costs. The design costs are the costs for negotiating on the terms of the exchange. The monitoring costs are the costs which are made to enforce these terms after the contract is signed (González-Díaz and Vazquez, 2008).

Both actors have different types of transaction costs. The search costs for the seller consist for example of costs for market research and advertising. The costs for buyers are for example comparing different sellers on quality and price. If the seller and buyer agree on transferring a good from one to another, they have to bear design costs for negotiating on the terms of the contract. The costs which both actors have to bear may be unbalanced, because for example the seller has to draw up the invoice, which the buyer only has to agree or disagree upon. After agreeing on the contract both actors have to comply to the terms of the contract, but both actors also have to monitor the other actor on this compliance (Groenewegen et al., 2010).

A political transaction is a special kind of transaction. It is a transaction between the government and other actors. Transaction costs of the government are called public transaction costs, the transaction costs of the contracting actor are called private transaction costs (Cooper et al., 2009; Groenewegen et al., 2010).

The level of the transaction costs depends on frequency of the transaction, asset specificity and uncertainty (Figure 1). Frequency is a factor which can reduce transaction costs. A higher frequency of transactions between two actors can lead to certain routines which reduce the average transaction costs of each individual transaction. Thereby, the transaction partners invest

in this relationship, in which mutual commitment and dependence is developed. This may lead to lower transaction costs because of mutual understandings (as trust). However, such a long term relationship may also lead to higher overall costs because dependency on one contract partner diminishes competitive mechanisms, the so called lock-in effect (Groenewegen et al., 2010).

Asset specific investments are investments which are specific for one transaction, and which cannot be transferred to alternative uses. This means that a contracting partner bears investments costs which are sunk costs within one specific contractual relation which may lead to one-sided or mutual dependence on the contract partner. This may lead to a hold-up problem, which means that the other actor exploits the inflexible situation of the investor to its own benefit. There are different types of asset specific investments, namely (1) site specificity (e.g. immobile investments), (2) physical asset specificity (e.g. special designed equipment), (3) human asset specificity (e.g. know-how), (4) dedicated asset specificity (e.g. production for only one buyer), and (5) intangible asset specificity (e.g. brand name capital for franchise holders) (Groenewegen et al., 2010).

Within a transaction there always are uncertainties, because of behavioral factors as well as environmental factors. Within an ideal situation actors would be fully rational and have complete information. In reality however, decision-making is more complex because of bounded rationality and incomplete information. Within agency theory a distinction is made between the principal (the commissioner) and the agent (the one accepting). A principal-agent problem arises when both have different interests and there is asymmetric information, that is one of the actors has an advantage in information. This can lead to the ex-ante problem of adverse selection and the ex-post problem of moral hazard (Groenewegen et al., 2010).

With adverse selection one actor (mostly the principal) has more information on the quality of the transacted product than the other actor. Without interference this, due to opportunistic behavior, would lead to market failure, as at the end only low quality products would be provided. An example of interference could be a liability system (Groenewegen et al., 2010).

	<i>Frequency</i>	<i>Asset Specificity</i>	<i>Uncertainty</i>
Search	-		+
Design	+/-	+/-	+
Monitoring	-		+

Figure 1; Factors influencing transaction costs

Moral hazard is a way of opportunistic behavior by the agent within a contractual relationship. It implies that the agent maximizes its own welfare at expense of that of the principal, by misusing the information asymmetry. In that way, after the contract is signed, the agent is, without consequences, able to put less effort in the contract than agreed. This leads to efficiency losses, the so called agency costs. These costs can be subdivided in (1) monitoring expenditures born by the principal (positive/negative incentives), (2) bonding expenditures born by the agent (showing good intentions), and (3) residual loss born by the principal (remaining costs) (Groenewegen et al., 2010).

Environmental factors which influence uncertainty are for example market developments, time inconsistency and the physical environment. Examples of uncertainty on market developments are changes in economic growth and preferences, and because of that, changes in demand for products. Time inconsistency implies the inconsistency between policy-agreement and policy implementation. It is the uncertainty about changing conditions in the future. Uncertainty in the physical environment are for example circumstances of the weather (Groenewegen et al., 2010).

3.3. GOVERNANCE STRUCTURE

A governance structure is the institutional structure in which actors coordinate their transactions. The choice for a certain governance structure is determined by transaction costs which in turn are influenced by uncertainty, asset specificity and frequency (Groenewegen et al., 2010). Spot markets (transactions regulated by competition and price) on the one hand and hierarchies (fully integrated transactions) on the other hand, can be seen as two poles of one continuum (Figure 2). Governance structures in between are called hybrids (Menard, 2004).

Within a hybrid governance structure actors pool part of their resources and decision rights. An example of a hybrid is a contract. A complete contract approaches the governance structure of the market. Such a contract often is recurrent and standardized and often concluded for the short-term. More towards the middle of the continuum are incomplete contracts. Such contracts, in which eventualities are not spelled out, often are concluded for the long-term and specified to an individual transaction. Close to hierarchies are joint ventures, in which contract partners pool a part of their resources (Groenewegen et al., 2010). Another example is a cooperative, a coordinating network based on long-term relationships (Van Huylenbroeck, 2007).

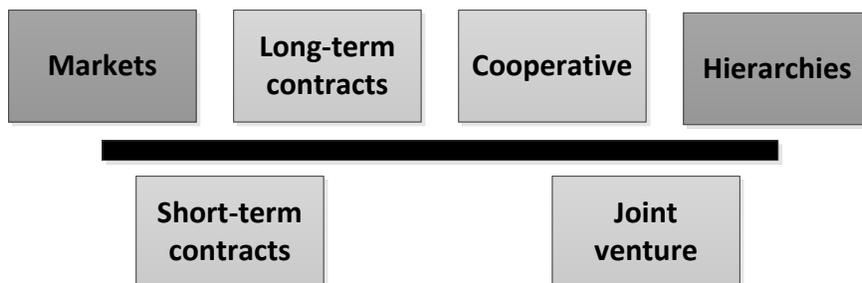


Figure 2; Continuum of governance structures

4. A CASE-STUDY: NORTH-WEST OF GRONINGEN

In this chapter the case of the North-West of the province of Groningen will be discussed. In section 4.1 the future organizational structure of the collective is explained, and the transition costs to alter the organizational structure are defined. In section 4.2 the public and private transaction costs in the old and new institutional structure are identified. Finally, in section 4.3 the factors which are expected to influence the transaction costs of the different stakeholders within the new institutional structure in the North-West of Groningen are described.

4.1. COLLECTIVE ORGANIZATION

4.1.1. GOVERNANCE STRUCTURE

In the old institutional structure of the AESs, the province of Groningen used standardized contracts with individual farmers (Figure 2). So, the government used complete medium-term contracts as a governance structure. Within this structure, the role of the collective is to be a supporting organization. Within the new institutional structure the collective will regulate the transactions. This means that the collective will have one long-term contract with the province of Groningen. Next to that, the collective will have many medium-term contracts with the individual farmers (Figure 2). At the moment, it is unclear to what extent these contracts will be standardized.

4.1.2. SUBSIDIES

The amount of subsidy that farmers receive in return for the agri-environmental practices that they apply are restricted by European laws,

which are bound to WTO regulations. The subsidy functions as a reimbursement for loss of income (European Commission, 2005; Van 't Klooster, 2014). Farmers enter into a contract when the marginal revenue is at least equal to the marginal costs. So, in the Netherlands the marginal revenue (the compensation received) used to be an amount which was based on the marginal costs that the farmers bear, which is fluctuating with the agricultural feed prices, which used to be indexed at the national level yearly. However, since a couple of years these sums have been frozen by the national government. Though, in recent years the marginal costs have increased because the agricultural feed prices have increased. This implies that at this moment, for many Dutch farmers the marginal revenue is lower than the marginal costs farmers bear, and so they are lower than the level the EU allows. When the marginal revenue is lower than the marginal costs, this likely will result in a lower amount of land under contract.

The collectives will have some freedom to decide what the amount of subsidy will be within their region, although they are restricted to the maximum amount the EU allows, so the marginal revenue should be equal to the marginal costs (Datema, 2014; Van 't Klooster, 2014). Within the North-West of the province of Groningen the idea is to increase the amount of subsidy. Because the total budget is more or less fixed, this automatically implies that there will be a lower amount of land under contract (Datema, 2014).

4.1.3. TRANSITION COSTS

In order to facilitate the transition towards the new structure, at the national level, a non-profit organization is established to support the development of the collectives so that they can function as an independent organization. This non-profit organization, called SCAN (Stichting Collectief Agrarisch

Natuurbeheer; Foundation Collective Agricultural Natureconservation), develops organizational and operational products which will be the same for all collectives in the Netherlands. Next to that, they support the formation of collectives on the regional level. In practice, this means that members of SCAN attend regional meetings in order to get information and advice about specific situations.

Each collective receives financial support from the national government in order to prepare themselves for the new structure. Total costs at the national level are around seven million euros. This financial support is €15,000.- per collective, complemented with €2,500.- per organization which will merge in the collective. So for example, within the North-West of the province of Groningen, three organizations, namely 'Stad & Ommeland', 'Boer&Natuur' and 'De Eendracht' will merge into one collective. This means that this collective receives €22,500.- to spend on transition costs.

Within the collective the largest part of the money is spent on labor costs of two employees which have been hired. One employee works on the organizational and operational side of the new collective. The other employee sets out the steps with respect to the content of the responsibilities of the new collective (Datema, 2014).

4.2. PRIVATE AND PUBLIC TRANSACTION COSTS

4.2.1. OLD INSTITUTIONAL STRUCTURE

Within the old institutional structure the public and private transaction costs are separated. The government bears the costs of the design of the contract, monitoring the contract and regulating the payments, while the farmers, with support of the collective, mainly bear the search costs for applying for a

contract. At this moment the compensation for transaction costs for farmers is set on a fixed amount of money per hectare per year. Farmers are compensated for information collection, meetings with the government and assistance by an expert (Swarts et al., 2012). The collective receives its income from the farmers under contract, who have to hand over 3% of their received subsidies, in exchange for support and executing the administrative tasks which are part of the process to apply for a contract (Datema, 2014).

4.2.2. NEW INSTITUTIONAL STRUCTURE

Within the new institutional structure the public and private transaction costs are not straightforward. In any case, the private transaction costs will belong to the farmers and will consist of search costs for applying to the contract. These costs will no longer be supported by the collective. The public transaction costs for the province will consist of approving the regional agri-environmental plan, the design costs of the contract between the province and the collective, and the monitoring of that contract.

Within the new structure, the collective will bear the highest transaction costs. They have a contract with the province, for which they have to bear search costs in order to be able to design a regional agri-environmental plan. Also they bear design costs of the contract with the province. Next to that, the collective will have multiple contracts with the farmers, for which they will have to bear the search, design and monitoring costs.

4.3. STAKEHOLDERS

4.3.1. PROVINCE

Within the old institutional structure contracts are standardized by the government. The farmer can only agree or not agree on a certain offer. Also contracts are not adjusted to certain situations in time, like a later breeding period for birds (Datema, 2014; Van 't Klooster, 2014). This implies a higher frequency per contract, and therefore it leads to low design costs. So standardized contracts may be most efficient, though, they are not the most effective way of organizing agricultural nature conservation (Van 't Klooster, 2014).

Within the old institutional structure the province had the task of monitoring and compliance to the contracts of each individual farmer. Due to economies of scale this may be the most efficient way. However, an opposite force is that, due to scaling up the monitoring to the national level, the gap between the executing body and the farmers increases. This implies that there is less intrinsic motivation to comply to the contract and less social control, and therefore less trust from the government towards the farmers and vice versa. This leads to higher uncertainty, and therefore higher monitoring costs (Van 't Klooster, 2014).

Within the new institutional structure the province has only one contract with each collective. In the province of Groningen this means that the province will have three contracts in total. Once in every six years they need to bear design costs, which consist of discussing on the terms of the contracts and approving the regional nature conservation plans. Within the six years' time period the province only needs to monitor the collective on its administrative tasks as well as on its ecological tasks. This implies that the role of the province will be much smaller in the new structure, and so the transaction costs that they bear will be much lower (Van 't Klooster, 2014).

Also the administrative burden of the province will be much lower, because the province only needs to pay the subsidy of the collectives as a whole, instead of paying all the individual farmers. So the whole administration system for farmer contracts will be transferred to the collectives.

4.3.2. COLLECTIVE

Within the old institutional structure the main role of the collective is to support the farmers in applying for a contract. So actually, the collective is the administration system of the farmers. The costs of this system were 3% of the total subsidy payment the farmers got. Next to the application task of the collective, it also supported farmers in the search for a new contract, through information provision (Datema, 2014).

In the old structure, the collective, as a region coordinator, makes a regional conservation plan in order to make the land under contract function as a coherent system. So farmers at least have to comply to these regional plans in order to get a contract. The regional conservation plan is an ecological plan, which has to be designed once every six year (Datema, 2014).

Within the new institutional structure the role of the collective will be extended. The regional conservation plan will not only function as an ecological plan. The collective has to design a plan in which both the ecological as well as the organizational plans are explained. This plan will function as a contract between the collective and the province. So the design costs of this plan are higher than they were in the old structure. The first time this plan has to be written will bear the highest costs, while it is expected that, with no governance changes, in the following time periods, due to frequency, these costs will be lower. The design costs also depend on trust, where a higher trust between the collective and the government will decrease these costs (Datema, 2014; Van 't Klooster, 2014).

The collective in the North-West of Groningen foresees no high search costs in the next future, as they intend to intensify conservation at a smaller amount of land. This implies that the collective will have to reject some parts of land which are under contract at this moment, while continuing conservation on the other plots of land. So, instead of attracting new farmers, they will have to reject current contracted farmers (Datema, 2014).

Due to the fact that there will be no new contracts signed until 2016, the influence of the contemporary uncertainty about the new structure on the search costs is assumed to be low, seeing that farmers just wait until things are clear and worked out. As mr. A. Datema, chairman of the collective Boer&Natuur, and the vice-chairman of the cooperating collectives of the North-Netherlands, puts it: *"The experience teaches us that most of the farmers do not worry about it. There are some people who are closer to the discussion, and in that way, gain more information about it. But most people say 'I have my contract and we will see. If there is an interesting offer, then I can think about it, and if not, then not.'"* (2014).

Within the new structure contracts will still be stringent, because they are linked to European law and regulations. Moreover, they are also related to broader national and provincial nature conservation goals (Van 't Klooster, 2014). At this moment, the collective in the North-West of Groningen assumes it has the liberty of action to preserve a part of the budget to spend on last-minute conservation subsidies during the season. So when circumstances change, for example the breeding period of birds is later than expected, the collective can offer an extension of the contract period and is able to provide a reimbursement for that. Of course specifying contracts to specific situations will lead to higher design and monitoring costs, but it is expected that it will increase the ecological output (Datema, 2014).

How large the design costs within the new structure will be for the collective is partly depending on the way they decide to organize themselves. If they decide to work together with other collectives, and establish an administration together, instead of having their own, design costs may be at a lower level due to economies of scale (Datema, 2014). Another possibility is that a couple of collectives together will outsource their administration department to a commercial trust office (Van 't Klooster, 2014). At the moment it is not clear what will be decided, and if all Dutch collectives will work in the same way.

Within the new structure, the collective is responsible for monitoring the farmers. Important is that the members of the inspection are independent. Within the North-West of Groningen the idea is to establish a semi-independent inspection commission of members of the collective who are not under contract. A second idea is to work together with a collective nearby, and exchange each other's inspection commission in order to get a more objective way of monitoring. The members of the commission receive a reimbursement for their work which is a little more than cost-covering (Datema, 2014).

In the opinion of G. van 't Klooster of LTO North-Netherlands, the administrative burden which comes together with the European regulations concerning monitoring will push the collectives to the outsourcing of the task. Thereby, Van 't Klooster believes that collectives cannot judge their own work nor the performances of their own farmers (2014). However, an advantage of a monitoring commission which is closer to the farmers network, is that it is expected that there will be a large social control (Datema, 2014).

4.3.3. INDIVIDUAL FARMERS

Within the old institutional structure most tasks concerning the administration part of agricultural nature conservation is executed by the collectives. Individual farmers bear a compensation for these costs. Because the government works with take-it-or-leave-it contracts, farmers do not bear design costs, as they can only accept or not accept a contract. Search costs also are low, because of these types of contracts, and the high frequency most contracts have (Van 't Klooster, 2014).

The intrinsic motivation farmers have within the old structure is considered to be low, because of the inflexible contracts. Therefore trust between the province and the farmers also is low, which implies higher design costs for the farmers and higher design and monitoring costs for the province (Van 't Klooster, 2014).

Within the new institutional structure farmers will have to bear the search and design costs themselves. They also have to execute these tasks because the changing role of the collective. This means that the individual farmer can discuss on the terms of the contract with the collective. At the moment it is unclear to what extend these contracts will be flexible (Datema, 2014).

The intrinsic motivation farmers will have within the new structure is considered to be higher than within the old structure. This is because it is expected that the bottom-up approach which is the basis of the new structure, will lead to a higher involvement in the regional plan and therefore will lead to a higher motivation to contribute to this plan. As a higher intrinsic motivation is expected to contribute to a higher trust between the farmer and the collective, and as the farmer is a part of the collective, the design and monitoring costs are expected to be lower in the new structure (Datema, 2014; Van 't Klooster 2014).

Table 1: Overview of factors influencing the transaction costs in the old and new framework

		Old	New
Government	<i>Search</i>	-	-
	<i>Design</i>	Design and approve new contract applications individual farmers	Design and approve contracts collective
	<i>Monitoring</i>	Monitoring individual farmers	Monitoring collectives
Collective	<i>Search</i>	Searching for new participants (although these costs are low due to high frequency of contracts)	Searching for new participants (although costs are low due to concentration)
		Providing information on contracts to farmers	Searching information in order to design regional agri-environmental plan
	<i>Design</i>	Applying new participants for contract	Design contract province
		Collective conservation plan	Design and approve new contract applications individual farmers
<i>Monitoring</i>	-	Monitoring individual farmers	
Farmers	<i>Search</i>	Searching for information (although these costs are low, because of the supportive function of collectives)	Searching for information
	<i>Design</i>	(no costs because of take-it-or-leave-it-contracts)	Design contract with collective
	<i>Monitoring</i>	-	-

5. OPPORTUNITIES AND BOTTLENECKS

In the preceding chapter the factors influencing the transaction costs in the new and the old institutional structure in the North-West of the province of Groningen are identified. The new governance structure is introduced because the government expects it will be more efficient. In this chapter the opportunities and bottlenecks of the new institutional structure on the transaction costs are identified, in order to clarify the action which can and/or should be undertaken in order to make this efficiency switch work. In section 5.1. the importance for collectives to receive liberty to act is explained. In section 5.2. the motivation of farmers to participate in the new institutional structure is described. Furthermore, in section 5.3. the opportunities and bottlenecks of the new institutional structure with regard to the overhead costs are given.

5.1. LIBERTY TO ACT

The basic idea behind the new institutional structure is that it is based on a bottom up approach. This implies that the collectives will get the freedom to work out an agricultural conservation plan which fits the region and has support of the members. Thereby, the collectives will have the responsibility to care for the financial and administrative part of agricultural nature conservation. The collectives and their members are in general very motivated to execute all these tasks. Though they are not very excited about the financial and administrative part, they believe they are able to do it, and accept it because they will get more self-control. However, this self-control and liberty to act in their own way will be the crucial key to make the plan succeed (Van 't Klooster, 2014).

The plan will fail if collectives do get the full administrative burden, but do not get the liberty to act because the provinces give them too little freedom (Van 't Klooster, 2014). As Mr. Datema puts it: *"When it has to happen as the province wants, when we get a map with all the lines already drawn, and the only thing we are supposed to do is color it in, then it makes no sense to us. I believe I touched a sore point there. But that is what the whole discussion is about. In the region we are not dying to the do only the whole administration"* (2014).

It is expected that the freedom to act will have a positive influence on the motivation of farmers to participate in agricultural nature conservation. This is important for ecological as well as economic reasons. Trust between the collective and the province will be essential. One of the requirements for collectives is performing an ecological validation. This ecological validation will function as a tool for collectives to prove that their conservation plan is effective. However, the province has the task to translate European and national policy into regional policy, so they have to set the structure and have to take care of the coherency. The bottleneck of the new structure is that there has to be a good balance between the responsibilities of both organizations, because collectives and the province are mutual interdependent (Datema, 2014; Van 't Klooster, 2014).

5.2. MOTIVATION FARMERS

Within the old institutional structure, provinces offer take-it-or-leave-it contracts to farmers. According to Mr. Van 't Klooster, the motivation for farmers to accept such a contract is mainly based on rational economic thinking: *"Farmers only think 'what's in it for me'"* (2014). Within the new institutional structure farmers get the possibility to contribute to the content

of the environmental plan, and have the possibility to present and discuss their views. Due to this bottom up approach, the ideas behind the plan will be shared among all members of the collective (Van 't Klooster, 2014).

According to Mr. Datema in reality the plan will still be written in the office, because it is subordinated to regulations of the higher public authorities. Moreover, as there should be validation of ecological measures, this requires the contribution of experts. However, farmers have the knowledge and experience on what will work out the best on their farm, so they are also an important source of information (Datema, 2014).

The opportunities are that the collective should gain the trust of its members, and really make them feel that they have influence on the policy of the organization. A difficulty in this can become that the collective will have to reject applications of farmers, because they do not fit into the environmental plan. So it will be a challenge to keep these farmers still motivated (Datema, 2014).

Another important factor influencing the motivation of farmers to apply for a contract is the mindset of farmers in general. There is a shift taking place from a pure profit-maximization way of thinking towards a more sustainable way of farming. Not because farmers necessarily are becoming more idealistic in that sense, but primarily because the society is expecting this from the farmers. In order to maintain their license to produce, farmers are more and more thinking about sustainable farming, and agricultural nature conservation fits within that mindset (Datema, 2014; Van 't Klooster, 2014).

On the other hand, the abolition of the milk quota system is an opposite force. It is expected that farmers will milk more cows. As their livestock will increase, their need for agricultural feed will also increase. For this reason it is expected that farmers will use more hectares of their land for their own feed demand. So, to keep farmers within the focus areas motivated to

execute agricultural nature conservation practices, the reimbursement for these practices needs to be sufficient (Datema, 2014).

5.3. OVERHEAD COSTS COLLECTIVES

The government assumes that within the new structure the collectives are able to have a total overhead of not more than 15%. Within the old structure the total transaction costs of all stakeholders are 40% of the total costs. The overhead costs of the collective can be subdivided into variable and fixed costs. The fixed costs consists of the costs for the office and the transaction costs collectives bear for the contract with the province. The variable costs are the transaction costs the collectives bear for the contracts with the farmers. To achieve maximum overhead costs of 15% on meadow bird conservation it is expected that a minimum turnover of 1,5 million euro is needed (SCAN, 2014).

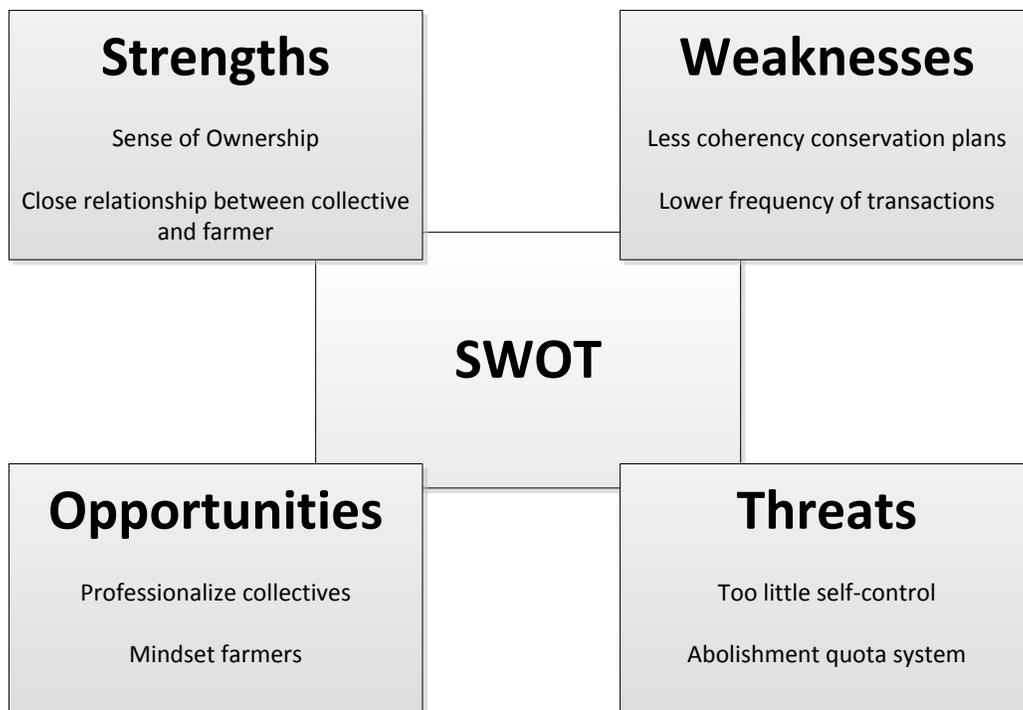
It is important to identify which costs are overhead costs which the collectives have to bear, and which costs are for the government. Next to that the costs and the quality requirements need to be balanced well. As Mr. Datema says: *"If the government requires that the collectives have to execute these tasks, and also requires high quality of work, which is justified, and at the same time says 'it may only cost 15%', while at the moment it is 40%, in my opinion, that will not go hand in hand"* (2014).

Therefore, it will be important to identify which tasks have to be executed by the collective and what the minimum costs are that these tasks involve. Next to that it is important that collectives critically look at how they can lower the costs. The level of overhead costs of a collective will be a critical point of the provinces evaluating a regional agricultural nature conservation plan. It is

because of this that it is important for collectives to understand what costs they bear for what activity (Datema, 2014; SCAN, 2014)

According to Mr. Van 't Klooster the new institutional structure will be more efficient because it is a bottom-up approach. For that reason, farmers have the feeling they are owners of the agricultural environmental plan of their region, and therefore they are more motivated to contribute. For this, it will be important to have a close relationship between the collective and the farmers. However, as a higher frequency can reduce the administrative burden and transaction costs, a collective with a larger turnover is advisable (2014).

A good balance between the minimum amount of turnover and the maximum distance between the collective and the farmers is essential (Van 't Klooster, 2014). An option can be to maintain the smaller regional agricultural nature organizations to act as a connection between the administrative head office and the farmers (Datema, 2014).



Strengths:

- Farmers have a sense of ownership, and therefore are more intrinsically motivated to get involved in agricultural nature conservation
- The close relationship between the collective and the farmers reduces the transaction costs, as it positively influences trust

Weaknesses:

- The bottom-up approach can cause an incoherent provincial nature conservation plan
- Because of lower frequency of the transaction the benefits of economies of scale will get smaller, which may increase transaction costs.

Opportunities:

- The overall mindset of most farmers is changing due to a changing societal demand.
- The collectives get the possibility to professionalize their organization and prove that they are able to organize their own conservation policy within their region.

Threats:

- The collectives will get too little liberty to act, because the province will narrow their liberty to act down to a minimum level.
- The milk quota-system will be abolished in 2015, which may have a negative influence on farmer participation in agricultural nature conservation.

Figure 3; SWOT-analysis of the new framework

6. CONCLUSION AND DISCUSSION

6.1. CONCLUSION

The research objective is to identify the different private and public transaction costs in the 'old' and 'new' institutional structure of AESs in the Netherlands and determine their causes. To achieve this objective a comparison is made between this old and new structure. Furthermore, the general principles of transaction costs are explained. Finally the case of the North-West of the province of Groningen is used to identify the factors influencing the transaction costs in this region, and to find out what the perceived opportunities and bottlenecks on the efficiency of the new structure are.

The most important difference between the old and new structure of the AESs is that the responsibility for the contracts with the farmers shifts from the government towards the agri-environmental collective. So, the governments will set the broader framework, and the collectives become the executive body. In the old structure the province bears the public transaction costs and the farmers, with support of the collective, the private. In the new structure this division is more diffuse.

In the old structure, the frequency of contracts led to low design costs for the government, however, these contracts are not effective. Also monitoring costs are high, because of high uncertainty between the government and farmers. In the new structure, the government has only one contract with the collective, for which they both have to bear design costs.

Next to that, the collective will have several contracts with the individual farmers. For these contracts the collective will have to bear search costs, but these costs are not expected to be large. Also they have to bear design

costs, which are expected to become better adjusted to specific situations. This, in combination with a smaller executive body, implies lower frequency, and therefore higher design costs. Monitoring costs are expected to become lower, because of trust between the collective and the farmers, and a higher social control between the farmers. The difference for the farmers is that they will have to execute their administrative tasks with regard to AESs themselves, a task initially executed by the collective.

The most important opportunity for the efficiency of the new structure is that it is expected that farmers are more intrinsically motivated. The most important threat is that the relationship between the province and the collective will become unbalanced.

In conclusion it can be said that the private transaction costs for farmers hardly change. The level of public transaction costs of the province is much lower in the new structure, and will consist of design costs and monitoring costs. The level of these costs will mainly depend on the level of trust towards the collective. Because of the changing responsibilities, the transaction costs for the collective will increase, most and for all the design and monitoring costs. Overall, the design and monitoring costs may become lower than in the old structure because of higher trust, while the design costs may become higher because of lower frequency.

6.2. DISCUSSION

The objective of the research is based on the upcoming transition of the institutional structure of the AESs. The government assumes that this new governance structure will be more efficient than the old structure. As the new structure is not yet introduced, no comparison can be made between those frameworks yet. Therefore, this research is explorative, and is meant

to give more insight in the most important underlying factors influencing the transaction costs.

At the start of the research, it was expected that the overall framework of the new governance structure would be more or less clear at the time of starting the interviews. However, the process of the transition is delayed, and so many decisions with regard to this structure are not made yet. This uncertainty made that the results of the research are not as exact as was expected. This makes that the research is more explorative than hoped for, but it also implies that the results of the research can be taken into account while constructing the new structure.

As it was not possible to interview someone from the provincial government, the focus of the research has been placed on the collective. Though, as the task of the province is clear, the transaction costs could still be identified. The disadvantage of not having any personal communication with the provincial government is that their opinion on the new structure has not been taken into account, and this is why the results may be biased. Because within the new structure the responsibility for AESs is assigned to the province instead of the national government, the implication of the new structure on the public transaction costs on the national level are not incorporated.

Within the research the case of the North-West of the province of Groningen is chosen. The advantage of this is that due to this focus in-depth information was gained. A disadvantage is that the new structure will be applied differently within each province and individual collective, which implies that it may be difficult to generalize some of the results.

However, most of the results are applicable within a more general context. The distribution of the transaction costs will be more or less the same within each province. It is important that it is clear which costs belong to the

private transaction costs and which to the public transaction costs before applying the new structure. There still is uncertainty about the target of a maximum amount of transaction costs of 15%, as it can be questioned if this is realistic when the former public transaction costs of monitoring also belongs to this 15%. So an overview is needed of the distribution of the transaction costs and the expected level of these costs.

The crucial factor of making the new structure work out in practice is that the relationship between the province and the collective will be in balance. When the province and the collective act as competitors instead of cooperative partners, not only the efficiency of the new structure will be threatened, but also the effectiveness. The most important advantage of this new structure is that it will function bottom-up. However, the responsibilities the collective will have and the benefits of economies of scale require a certain professionalism of the collective. A good balance between the sense of ownership which farmers should have and the level of professionalism the collective needs to have is another crucial factor for the new structure to succeed in becoming more efficient.

This research can be used as a stimulus to think about ways to optimize the new structure. Therefore, a recommendation for further research is to focus on a part of the whole structure in more detail and search for ways to make this part more efficient. As in this research trust is identified as one of the most important factors, it would be interesting to research how the level of trust can be increased. Moreover it may be interesting to investigate what the influence of social capital is on the transaction costs of the collective. Another recommendation is to explore the relationship between the effectiveness and the efficiency of the new structure, in order to make one euro more effective in ecological sense. For this a multi-disciplinary research should be conducted.

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