Geographic distribution of CAP subsidies in the Netherlands

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Tia Hermans, Han Naeff & Ida Terluin

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ABSTRACT
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Each year, the Dutch agrarian sector receives a number of direct payments from the EU as part of its Common Agricultural Policy (CAP) budget. This report presents the geographic and sectoral consequences of these payments. A database from the Dutch ministry of agriculture, nature and food quality provided the addresses of direct payment recipients as well as the amounts they received under each EU regulation. The study mapped the distribution of subsidies paid out in 2004, the expected situation in 2006 based on the historic entitlement allocation model and the expected situation if the flat rate model were adopted. The calculations also included a number of variations on these two models in which non-trade concerns are addressed to different extents. The non-trade concerns considered in this study are production circumstances, landscape quality and sustainable production. The analysis revealed that, compared to the situation in 2006, which is based on the historic entitlement model, the geographic and sectoral consequences of alternative allocation models could be enormous.

Key words:
CAP, direct payments, geographic distribution, agrarian sector

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Information:
Tia Hermans
+31 317 474432
tia.hermans@wur.nl

Design: Karel Hulsteijn, Wageningen UR, Communication Services

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P.O. Box 47; 6700 AA Wageningen; the Netherlands
Tel.: +31 317 474700; fax: +31 317 419000; e-mail: info.alterra@wur.nl

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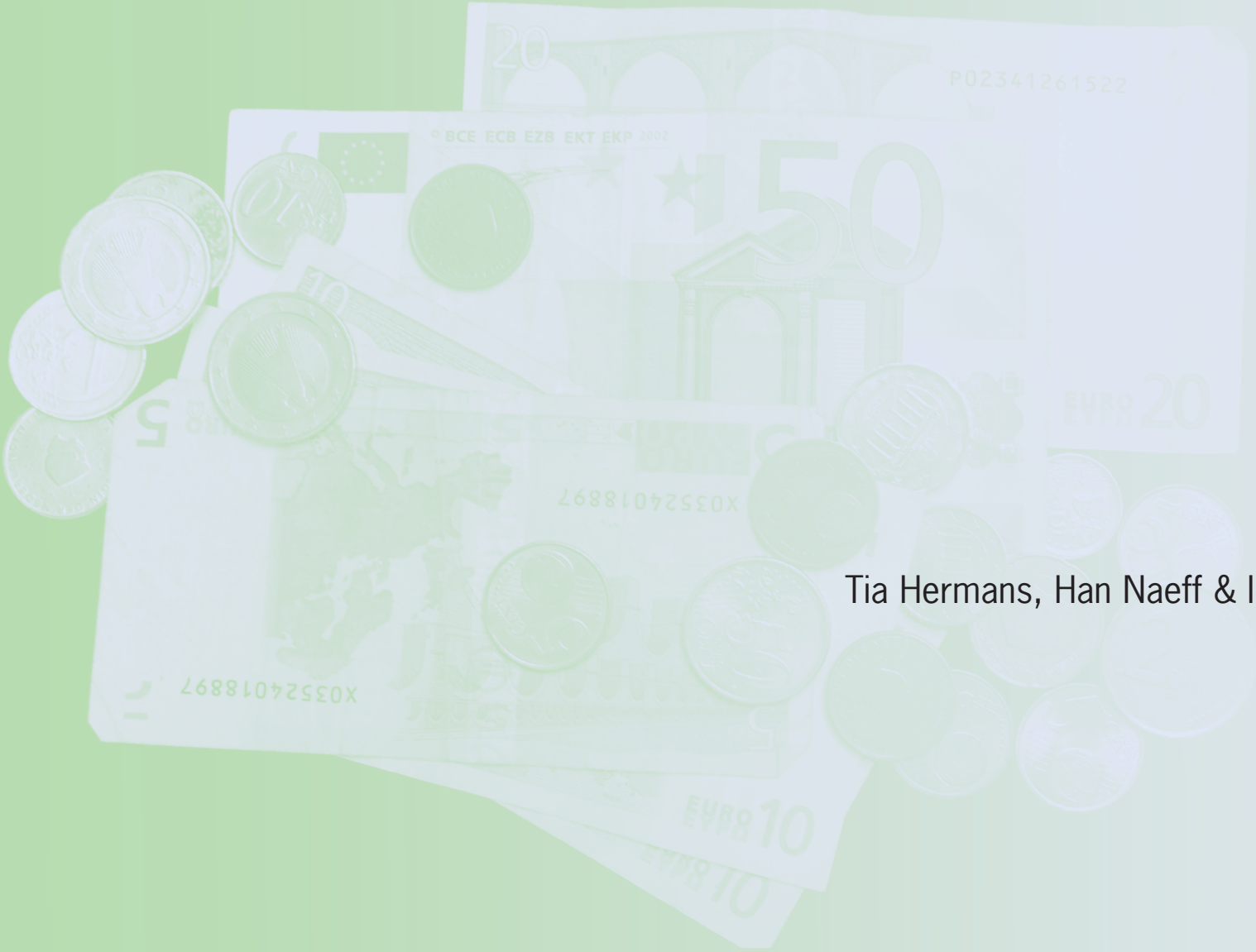
Geographic distribution of CAP subsidies in the Netherlands



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Foreword

In the fall of 2005, the identities of individual recipients of Common Agricultural Policy (CAP) subsidies in the Netherlands were made public. This provided the ideal opportunity to find out where in the Netherlands these subsidies were going. The objective was not so much to identify who received this money in the first place, but where it eventually ended up, because knowing this would make it possible to understand the geographic distribution of CAP subsidies. Did the money end up in areas targeted by the Dutch government for specific purposes?

Within the framework of recent CAP reforms (2003), agrarian entrepreneurs are now being granted subsidies that are no longer linked to the volume of production. In the Netherlands this has taken the form of a yearly payment based on historic entitlements claimed by the farmer in the reference period 2000-2002. This allocation scheme came into effect at the start of 2006 and will be evaluated in 2009. In the meantime, the Dutch ministry of agriculture, nature and food quality wants to identify the potential effects of alternative models of allocating income supports, discuss these alternatives and eventually decide how to proceed in the period starting in 2009. Based on the data published in 2005, this study maps the geographic distribution of subsidies based on the current allocation model and on six alternative models. The most important objective is to identify the magnitude and location of changes that would take place if any of the proposed alternatives were adopted. The information provided is intended to serve as a helpful tool in the debate on alternative allocation schemes. It does not support or promote any particular choices.

While conducting this research, we consulted regularly with the ministry of agriculture, nature and food quality. In monthly meetings, Gerrit Meester and Roald Lapperre of the ministry's international affairs policy directorate and Barto Piersma of the agriculture policy directorate helped us plan each step of the project and considered various allocation alternatives. They also put us in contact with experts on the various EU regulations. We are very thankful for their efforts. The authors of this report are solely responsible for its content.

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Summary

Each year the Netherlands is allocated money from the Common Agricultural Policy budget by the European Union. Until recently, most of that money was linked to the volume of production. In 2003, the EU decided to sever this linkage and replace it with single farm payments. On 1 January 2006, the Netherlands introduced a new scheme in which farm subsidies are allocated on the basis of entitlements claimed by individual farmers in the reference period 2000-2002. However, other ways of allocating the subsidies are also possible. This study identifies how variations of the current scheme will lead to geographic and sectoral shifts in the allocation of subsidies. The underlying question is whether the majority of farm subsidies have actually ended up in the sectors and geographic areas, such as Nationale Landschappen (National Landscapes), targeted by the government for specific purposes. Would it be better to adopt a different allocation scheme when the national interim evaluation of the CAP takes place in 2009? And if so, which one, and how would it affect the various sectors and regions? To answer these questions, we used subsidy data released by the Dutch ministry of agriculture, nature and food quality at the end of 2005.

Nineteen regulations were classified as farm subsidy regulations. The total value of farm subsidies received by the Netherlands decreased from € 1.24 billion in 2004 to an estimated ¤ 916 million in 2006.

The reported situation in 2004 and six alternative payment models were studied. In consultation with the ministry, the following schemes (allocation models and variations thereon) were chosen for this study.

a) Historic entitlement model (i.e. the situation in 2006, assuming that single farm payments for milk, sugar and starch would also be implemented by then).
b) Two variations of a) whereby either 20% or 50% of the historic entitlement budget would be skimmed off (modulated) and allocated based on a point system that rewards satisfaction of conditions related to non-trade concerns.
c) Variation of a) whereby single farm payments would be capped at € 40,000 per farm and the extra money made available in this way would be allocated based on a point system that rewards satisfaction of conditions related to non-trade concerns.
d) Flat rate model (every hectare of agricultural land in the Netherlands would receive the same amount of money).
e) Two variations of d) whereby either 20% or 50% of the flat rate budget would be modulated and allocated by means of a point system based on satisfaction of conditions related to non-trade concerns.

The 'non-trade concerns' considered in this study are the following:

a) Production circumstances: classification as a recipient of Dutch government subsidies for agricultural nature conservation (SAN) or for permanent nature conservation (SN). Together these represented 180,000 hectares in 2004.
b) Landscape quality: classification as a National Landscape (465,000 ha).
c) Sustainable production methods: classification as a certified organic farm (52,000 ha).

One point is allocated per hectare for each category. The total number of points available for allocation in the Netherlands (697,000) is divided

by the budget acquired from the modulating of the amounts in variations b, c and e.

The geographic distribution of CAP payments revealed in the 2004 data (in euros per hectare of agricultural land) clearly shows how the CAP budget is spent: areas dominated by the production of starch potatoes (Veenkoloniën - eastern areas of the province of Groningen), sugar beets (in the province of Flevoland, the northern areas of the provinces of Friesland and Groningen, and the Veenkoloniën), milk (the provinces of Friesland, Overijssel, Gelderland and North Brabant) and veal (Gelderse Vallei) receive a relatively large number of payments, whereas areas under more unregulated crops, such as table potatoes, onions, vegetables, fruit, bulbs and flowers, receive fewer payments. As of 2004, the agrarian businesses (referred to here in general as farms) that received the highest payments (in euros per recipient) were concentrated in the three northern provinces (Friesland, Groningen, Overijssel) and Flevoland. In the Veenkoloniën, these were mostly farms growing root crops (starch potatoes, sugar beets), whereas in Friesland they were mostly farms with grazing livestock that received a milk premium as well as a slaughter and beef premium. In Flevoland they were mostly farms with arable crops and grazing livestock.

Adopting a different allocation scheme would have both geographic and sectoral consequences. The historic entitlement model would be detrimental to areas that depend heavily on milk and dairy products, sugar beets and starch potatoes. Payments to these areas would decrease by 40% compared to the situation in 2004. Geographic distribution, however, would still be concentrated in the northern provinces and Flevoland. With the flat rate model, € 448 would be allocated to every hectare of agricultural land in the Netherlands. Payments to areas with many unregulated crops and horticultural products, which receive little or no aid under the current historic entitlement model, would thus increase considerably, and the opposite would be true in areas that receive a relatively high amount per hectare under the historic entitlement model. Generally speaking, a flat rate would benefit areas in North and South Holland, Zeeland, Flevoland and the northern areas of Friesland, Groningen and the province of Limburg, to the detriment of the rest of the country, primarily the Veenkoloniën, the Gelderse Vallei and North Brabant.
The sector that receives the most subsidies under the historic entitlement model is the grazing livestock sector (almost € 600 million), followed by the arable crop sector (almost € 170 million) and mixed farms (€ 80 million). The granivore sector (€ 12 million) and the horticulture and permanent crop sector (€ 8 million) receive the fewest subsidies. Choosing the flat rate model rather than the historic entitlement model would not change this picture, except that the last two sectors would change places and the grazing livestock sector would lose € 68 million to all the other sectors.

With both models, modulation and redirection of funds was done in this study by applying an across-the-board reduction of 20% or 50%, or by capping subsidies paid to single farms at € 40,000 (this figure was only calculated for the historic entitlement option). The budget acquired in this way is made available for allocation based on satisfaction of non-trade concerns (697,000 ha). The available budget per hectare for each non-trade concern then amounts to € 262 (20% modulation), € 656 (50% modulation) and € 164 (capping). If an historic entitlement or flat rate model is linked to modulation and redirection based on satisfaction of conditions related to non-trade concerns, the farms that would receive higher payments are located primarily in areas designated as National Landscapes.

The calculated redistribution of payments over the various areas and regions that would result from the different allocation schemes says in itself little about the continuity of agriculture in these areas. To draw any conclusions about the effect the redistribution would have, for example on the viability of agriculture in certain regions, the changes in farm subsidies would have to be related to the level of farm income. To gain more insight into the effects of specific subsidy allocation models, it would thus be advisable to analyse the relationship between the changes in the payments and the levels of farm income.

1 Introduction

1.1 The Common Agricultural Policy

The Common Agricultural Policy (CAP) is the most visible EU policy. Half of the EU budget (about € 50 billion; European Commission, CAP monitor 2005) in 2004 and 2005 was allocated to the CAP of the 25 EU countries. The same amount is budgeted for 2006.

The CAP started in the mid-20th century when the EU member states of the time refused to incorporate agricultural products in the agreed 'common market' system unless a common agricultural policy was also developed. They feared that farmers' incomes would drop too low. This special status for agriculture was set up when the European Economic Community was established in 1957. The objective of the common agricultural policy was five-fold: higher productivity through optimal utilisation of production factors, a reasonable living standard for farmers, stable agricultural markets, and sufficient food for the population at a reasonable price (CAP monitor 2005). In the years since, the CAP has undergone a number of reforms, most recently those in Agenda 2000, focusing on rural areas and the integrating of the CAP in market and income policies (pillar 1) and rural development policy (pillar 2), and the Mid-term Review of 2003, which decoupled European subsidies from production, introduced single farm payments and modified pillars 1 and 2. An accord was also reached in the fall of 2005 on reform of the EU sugar regime.

Member state s have a number of freedoms in implementing the proposed reforms of 2003. Farm subsidies, for example, can, under certain conditions and to a limited extent, still be linked to production. For now, the Netherlands is still maintaining slaughter premiums for cattle (adult animals, young steers and veal calves) and support for sowing seed production for linseed. Sixty per cent of the subsidy for starch potatoes is still coupled to production. Dryers of fodder crops (grass, alfalfa and clover) receive the linked portion of the support for dried fodder crops. The milk and dairy premiums will not be decoupled until 2007 (Bruins et al., 2006). The member states are also free to determine how the farm subsidies are allocated. Different models can be applied. The historic entitlement model determines payments based on the average amount of support received annually by a farmer in the reference period 2000-2002. The flat rate model calculates entitlements for all farms in a particular region based on an average payment per hectare. Combinations of these models are also possible, and in time so will be the replacing of one model with another. For now, the Netherlands has chosen to implement the historic entitlement model while retaining a partial link to production. According to current European regulations, once a member state has decided on how to implement the farm payment regulation, this decision can no longer be altered. Future changes will have to be determined through a council compromise.

1.2 Project objective

In 2004, the Netherlands was allocated € 1.4 billion out of the CAP budget by the EU. Where in the Netherlands did that money go? Which sectors and which geographic areas benefited most? What changes can we expect in the allocation of the financial stream among the sectors and regions based on the reforms that went into effect in the Netherlands on 1 January 2006, including allocation of farm subsidies according to the historic entitlement model? Will most of the farm subsidies end up in sectors and areas for which the government has specific ambitions, such as the National Landscapes? Would it be preferable to choose a different allocation scheme during the national mid-term review in 2009? If so, which one and what effects will this have on the various sectors and regions?

The objective of this study is to map out the geographic distribution of the CAP payments in the Netherlands. This was done for the situation as it was in 2004, for the projected situation in 2006 (based on the historic entitlement model and a few variations allowed for by the reforms that went into effect at that time) and for the flat rate model in a few variations. What we want to do is identify how the various allocation schemes will affect the distribution of payments. This overview can contribute to the discourse in the Netherlands, both within and beyond the ministry of agriculture, about the preferred way to allocate farm subsidies, how this relates to national policy objectives, and the consequences for the sectors and regions.

1.3 Limitation

In mapping out the subsidies, we limited ourselves to the direct payments made from the first pillar (combined with the milk and dairy, sugar and starch subsidies). The second pillar money streams are not considered here because they are minimal compared to those from the first pillar.

1.4 Outline

This report is organised as follows:

Chapter 2: Global approach. What is this study about and how will we present the results? Information about the regulations incorporated in the spatial images. What data did we use?

Chapter 3: Methodology used to translate the amounts received into individual payments per regulation. Explanation of the impact of each model and variation studied.

Chapter 4: The total direct support from the first pillar is presented along with the changes in subsidies that the various allocation schemes would bring about.

Chapter 5: Conclusions

Chapter 6: Recommendations

2 Methodology

InIn this chapter we will discuss our approach to mapping the geographic distribution of CAP payments. In section 2.1 we give an overview of the various regulations for which payments are granted. In addition to the actual geographic distribution of payments in 2004, we calculate what the effects would be of various allocation model variations. This is explained in section 2.2. In section 2.3 we present the maps and the calculation method used to determine payments per postal code. In the last section we discuss the data files used.

2.1 Overview of regulations

The direct payments, including the milk and dairy premiums and the sugar and starch subsidies, are mapped out in this study. The regulations affect various sectors and budgets. Figure 2.1 gives an overview of the regulations, including their volume in 2004. All together, the payments for all regulations in the Netherlands amounted to almost € 1.4 billion.

For the situation in 2004, each regulation was first mapped out individually. In the case of direct payments, the amount given to each recipient was attributed to the respective postal code area. In the case of payments made to the processing industry or government authorities, such as commodity boards and the ministry's policy directorates for regulations and rural development, we determined whether any (and if so, how much) money eventually ended up with the primary producers. After determining how much money per regulation ended up in a postal code area, we added up all the amounts per regulation per postal code area to arrive at a total amount received in the postal code area.

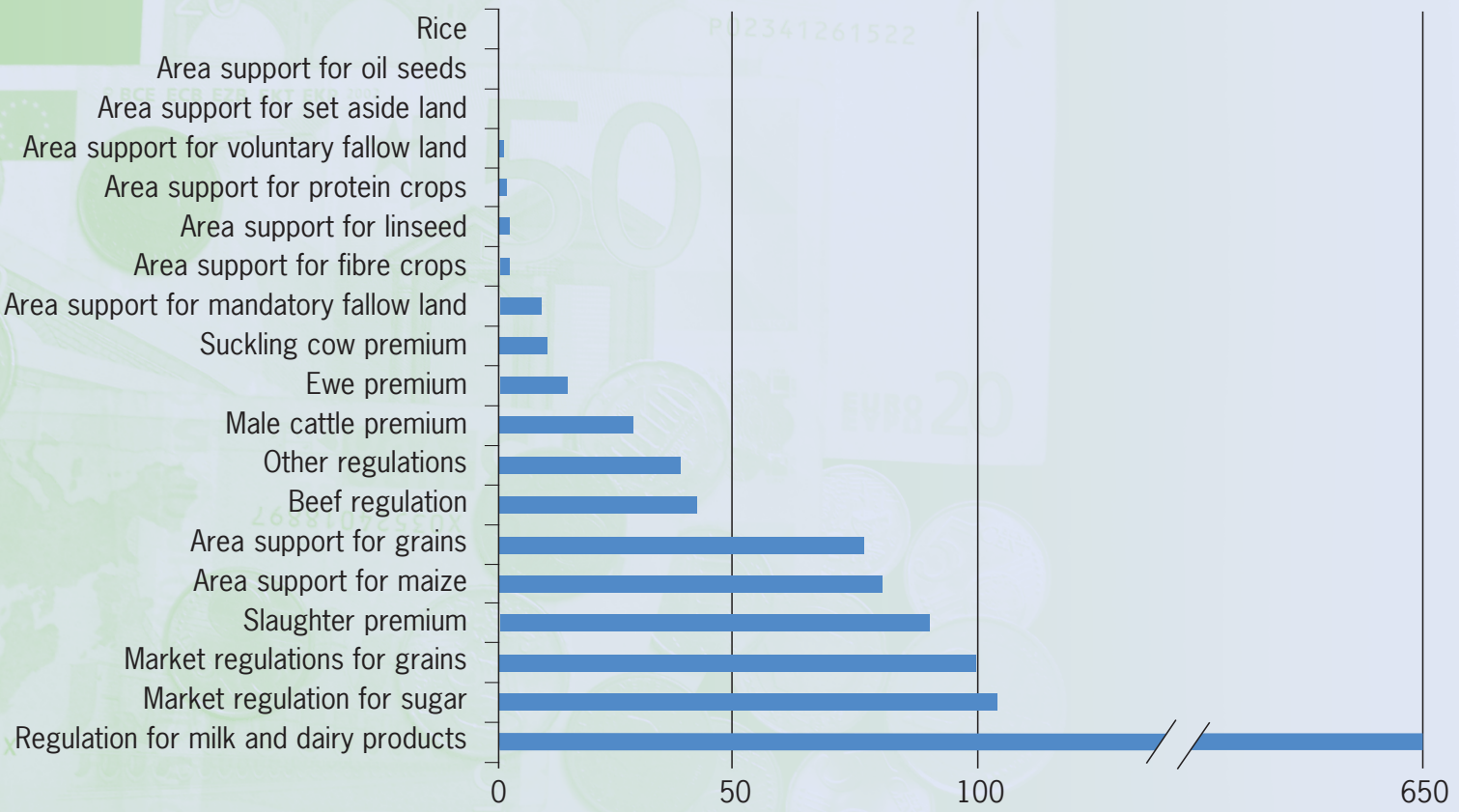
2.2 Overview of variations

In addition to the situation in 2004, we also calculated the expected effects of alternative allocation schemes. In consultation with the ministry of agriculture, nature and food quality, the following models and variations were chosen for consideration:

a) historic entitlement model (situation in 2006 assuming that single farm payments would be adopted for milk, sugar beets and starch potatoes);
b) variation of a) whereby either 20% or 50% of the historic entitlement budget would be modulated and allocated based on a point system for satisfaction of conditions related to non-trade concerns;
c) variation of a) whereby single farm payments would be capped at € 40,000 per farm and the amount made available in this way would be allocated by means of a point system for satisfaction of conditions related to non-trade concerns;
d) flat rate model (every hectare of agricultural land in the Netherlands would be allocated the same amount);
e) variation of d) whereby either 20% or 50% of the flat rate budget would be modulated allocated based on a point system for satisfaction of conditions related to non-trade concerns.

By non-trade concerns we mean:

a) production circumstances: whether or not a farmer is classified as a recipient of SAN or SN subsidies from the Dutch government for agricultural nature conservation or permanent nature conservation, respectively (180,000 ha qualified for this subsidy in 2004);
b) landscape quality: whether or not the land is classified as a National Landscape (465,000 ha);



Figuur 2.1 Direct payments in the first pillar of the CAP including their volume in 2004 (in million euros).

c) sustainable production: whether or not the farm is classified as an organic farm (52,000 ha).

Points are allocated per category. The budget made available by skimming the top off of payments in variations b, c and e (modulation) is divided by the total number of points to be allocated in the Netherlands. Historic entitlement is determined by the average amount received in the years 2000-2002. Considering that very little changed between these years and 2004, the historic entitlement model is based in this study on the data for 2004.

The flat rate can be implemented in a number of ways: per sector or crop, per region, nationally per sector or over the country as a whole regardless of sectors. An inventory has been made of all the choices made by the other EU member states that have already introduced the flat rate (Bruins et al., 2006). Variations of this model have also been studied by De Bont et al. (2006). In consultation with the ministry, we chose for this study the flat rate model whereby every hectare of agricultural land in the Netherlands would receive the same payment (variations d and e).

All of the variations are presented geographically. The flat rate model is also presented per sector.

2.3 Geographic images

Two types of geographic images were made: heat maps and difference maps.

2.3.1 Heat maps

These images indicate where the most (red=hot) and the least (blue=cold) money was received. A separate heat map was made for each regulation. To make these images, the amounts received for each regulation in a specific postal code area were totalled. The postal code areas were then arranged from high to low according to the total amount received. The postal code areas were then divided into five groups, each of which represents 20% of the budget available for that regulation. For example, if € 100 million were available through a specific regulation, each group would represent € 20 million. Five colours are used: dark red, light red, pink, light blue and dark blue. The areas that received the most money are coloured dark red. The areas that received the least money are coloured dark blue. Eventually all of the amounts per regulation were added together to create an overview of the geographic distribution of direct payments in the first pillar. This approach was used for the situation in 2004 as well as for the model variations.

2.3.2 Difference maps

These maps indicate the difference between the EU payments received per hectare or per recipient among the various model variations compared to the reference model. The historic entitlement model was used as a reference, based on the assumption that the sugar, starch, milk and dairy reforms would already have been implemented. As in the heat maps, the postal code areas in the difference maps are divided into five groups, this time in the sequence dark green, light green, light yellow, light red to dark red. The dark green colour indicates areas where payments per hectare would increase the most. The dark red colour indicates areas where payments per hectare would decrease the most. The light yellow colour indicates areas in which very little would change.

2.3.3 Payments per postal code area, per municipality, per region or per province

For each variation, the subsidies per hectare or per recipient are presented per postal code. Division per postal code was chosen because it gives the most detailed information about where changes would occur in the Netherlands. Moreover, it is also possible to aggregate the results of the postal code areas to reflect any desired larger administrative units (country or province) or economic units (e.g. COROP regions). Aggregation is also possible to the level of water board regions, bird or habitat protection regions and reconstruction areas.

For example, changes caused by the flat rate model compared to the situation under the historic entitlement model were also mapped per municipality, COROP region and province. The choice of which geographic division to use should be based on what question needs to be answered.

2.3.4 Payments per hectare or per recipient

The subsidies per hectare or per recipient can be calculated for each of the chosen geographic scales. To calculate the payments per hectare, we used data from the GIAB (geographic information on agrarian businesses) database. The GIAB database contains x,y coordinates of every agrarian business in the Netherlands that is coupled to central agricultural consensus data. The total amount of the payments received per postal code area (per regulation and before it is totalled) was simply divided by the total agricultural area in the postal code area. For postal code areas without agricultural land (city centres with post office boxes), the amount received was attributed to the next highest postal code area. If a postal code area had less than one hectare of agricultural land, the total was set at one hectare. We did this to make sure that the payments per hectare would not become extremely high. The advantage of presenting the payments per hectare for each postal code area rather than per postal code area in total (or another scale) is that the size of the area does not influence the size of the budget. Postal code areas do not all have the same surface area.

Recipients of direct payments are primary producers. To calculate the subsidy per recipient, we also had to consider the amounts paid to the industry or market as a whole through three separate regulations (for milk and dairy, sugar, and starch, see Chapter 3), and somehow attribute these to the primary producers in the GIAB database. To do this, the recipients identified in the GIAB database were coupled to the recipients listed in the ministry of agriculture's database using the subsidy data connected to their UBN numbers (unique farm numbers). The payments per regulation were then totalled for each recipient with the same UBN number. Most of the recipients of milk and dairy, sugar, and starch subsidies also received other subsidies, such as a maize or grain premium. After coupling the GIAB recipients (36,331) to the ministry's list of recipients, we discovered that 2,491 GIAB recipients did not appear in the ministry's database. These were entrepreneurs who received only milk, sugar and/or starch premiums. We subsequently added them to the ministry's database.

2.3.5 Sectoral maps

Sectoral maps were made for the historic entitlement and flat rate models. For both models, we calculated the amounts received per farm type and per sector. To do this, the recipients listed in the ministry's database were coupled to the agricultural entrepreneurs in the GIAB

database. In this way every recipient of EU payments could be categorised. The categories of farms and sectors are based on the NEG 2003 categories defined by the Agricultural Economics Research Institute (LEI) and they are part of the GIAB database.

The maps show especially how the payments would differ (in euros) between the models. After coupling the ministry's recipients to the GIAB database, we discovered that 6,300 recipients listed by the ministry were not included in the GIAB database and thus could not be categorised by sector. This group consists of 6,200 small farms that were not required to participate in the agricultural census (thus < 3 Dutch size units) and that together received € 6 million, and 100 large farms and cooperatives that together received € 39.5 million.

2.4 Data

To carry out this study, we used the following databases:

- Database provided by the Dutch ministry of agriculture, nature and food quality. This database includes the addresses of recipients of EU subsidies and the size of the payments per regulation per recipient. The information was provided for the financial years starting on 16 October 1999 and running through to 15 October 2004. EU financial years run from 16 October to 15 October the following year, so the 2004 situation was determined based on the data of 16 October 2003 to 15 October 2004. The historic entitlement model calculations were based in principle on the average payments from 2000-2004.
- Geographic Information System on Agri-businesses database (GIAB). This database, which is available at Alterra for the years 1999 to 2004, contains x,y coordinates for each farm coupled with the data compiled by the Central Bureau of Statistics, LEI, and the agricultural census on each farm's total area, employment opportunities, production type and production volume.
- Database containing the boundaries of the 4-digit postal code areas.
- Database containing the municipal boundaries (2004), COROP region boundaries (1997) and provincial boundaries.
- Maps of National Landscapes established by the Dutch parliament on 17 February 2006.

3 Assumptions per regulation and allocation variations

This chapter presents information on the subsidies granted in 2004 for the various regulations listed in Figure 2.1. More information about these and other market regulations can be found on http://europa.eu.int/comm/agriculture/markets/index_nl.htm. Variations of the allocation model are presented in Section 3.8.

3.1 Milk and dairy products

In 2004, the Netherlands was allocated € 652.7 million by the EU for milk and dairy products. This market regulation applied to the following products: milk and cream, buttermilk, yoghurt, whey, butter, cheese and curd, lactose and lactose syrup and milk preparations for animal feed. Payments were made to approximately 900 businesses in the processing industry, including 17 foreign farms (about € 14 million). The payments benefited the dairy farmers only indirectly, because the price they received per kilogram of milk was higher than the world market price.

Methodology

The Netherlands' milk quota was 11 billion kilograms in 2004. The GIAB database for 2004 contains data on the number of dairy cattle owned per farm, but no data on the milk quota per farm. The Commodity Board for Dairy Products (Productschap Zuivel) publishes data every year on the milk quota per province. By dividing the milk quota per province by the number of dairy cattle per province we were able to calculate the milk production per cow per province. By multiplying the assumed premium per kilogram of milk (see below) by the milk production per cow per province, we calculated the premium per cow per province (Appendix 3). We then multiplied the number of cows per farm per postal code area by the premium per cow and aggregated these figures per postal code area. This resulted in a total amount of subsidies per postal code area. These data were then used to create the geographic images.

For the situation in 2004, we based our calculations on a premium of € 0.06 per kilogram of milk. This amount is an assumption and represents the difference between the world market price and the internal price for milk in that year. For the historic entitlement model, we based our calculations on a premium of € 0.036 per kilogram of milk, or 60% of the calculated 2004 premium.

3.2 Beef

The EC regulation for beef (Council Regulation No. 1254/1999) comprises separate regulations for the internal market and for trade with third countries. The regulation for the internal market distinguishes between direct payments (male cattle premium, suckling cow premium, slaughter premium), additional payments and payments for public and private storage. The latter two categories were not yet in effect in 2004. The regulation for trade with third countries is mentioned in the ministry's database under the category beef.

3.2.1 Male cattle premium: € 27.6 million

Direct payments are granted to beef cattle producers who maintain a herd of male cattle on their farm (bulls and oxen). For bulls a one-time payment is granted for the duration of the animal's life; for oxen two payments are granted (in contrast to dairy cattle, for example, for which annual premiums can apply). In 2004, the premium was € 210 per bull and € 150 per ox. A farm had to maintain a herd of at least 3 bulls and

3 oxen in order to qualify for this subsidy. The number of animals for which a premium could be received in 2004 was limited by the requirement that no more than 1.8 large cattle units be kept per hectare. The Netherlands chose to allocate the payments as follows: € 80 per head of cattle if the number of cattle per unit area was less than 1.4 and € 40 per head of cattle if the number of cattle was between 1.4 and 1.8 per hectare. Together almost 5,600 beef producers received a total of € 27.6 million in 2004. Since the subsidy was paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

3.2.2 Suckling cow premium: € 10.6 million

This premium allows for direct payments to producers that maintain a herd of suckling cows. The payments are granted each year (unlike premiums for male cattle) and amounted in 2004 to € 220 per suckling cow. In this case, too, the number of animals for which a premium can be received is limited to 1.8 animals per hectare, and an extensification payment is also available. To be eligible, the farm has to maintain a herd of at least three suckling cows. Approximately 4,600 farms together received € 10.6 million in 2004. Since the subsidy is paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

3.2.3 Slaughter premium: € 89.5 million

Producers who maintain a herd of beef cattle are eligible for a slaughter premium. This premium applies to bulls, oxen, cows and heifers that are at least 8 months old, and amounted to € 80 per animal. The regulation also applies to calves that are 1 to 7 months old and have a slaughter

weight of no more than 160 kg. In this case the premium was € 50 per animal. About 40,000 farms received slaughter premiums totalling € 89.5 million in 2004. Since the subsidy is paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

3.2.4 Beef regulation for trade: € 41.2 million

The figure of € 41.2 million for beef refers to the regulation for trade with third countries. The regulation was intended to guarantee a market price for beef in one's own country that would not be negatively impacted by excessive imports or by exports at world market prices. Without this money, the price paid to producers would drop. As the premium is not paid directly to individual producers, it could not be derived directly from the database.

Methodology

We divided this amount among the 40,367 recipients of the slaughter premium on the assumption that it involved the same animals for which the slaughter premium was paid (animals put up for sale to slaughterhouses or for export). The subsidy thus had the same geographic distribution as the slaughter premium, but only about half the volume (€ 41.2 million versus € 89.5 million).

3.3 Sheep and goat meat

The EC regulation for sheep and goat meat (Council Regulation No. 2529/2001) comprises separate regulations for the internal market and for trade with third countries. The regulation for the internal market distinguishes between direct and additional payments (ewe premium) and private storage. The regulation for trade with third countries is intended to guarantee a market price for meat in one's own country.

3.3.1 Ewe premium: € 14.0 million

The ewe premium provides for direct and additional payments to producers who maintain a herd of ewes or goats. In 2004, it involved direct payments to about 14,500 producers in the Netherlands totalling € 14 million. The payment was € 21 per ewe and € 16.80 per goat. A farm has to maintain a herd of at least 10 ewes or 10 goats in order to qualify for the premium. Since the subsidy is paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

Subsidies for private storage of sheep and goat meat were not in effect in 2004.

3.3.2 Trade with third countries

This regulation was also not in effect in 2004.

3.4 Sugar: € 103.8 million

The market regulation for sugar was established in 1968 to support the income of producers and make the EU self-sufficient with respect to sugar. At the moment, EU regulation no. 1260/2001 is in effect. The Netherlands has a sugar quota of 872,000 tonnes of A (689,000 tonnes) and B (182,000 tonnes) sugar. That quota is allocated to sugar factories, which convert it into delivery rights for beet producers. The minimum price that sugar factories had to pay producers in 2004 was € 46.72 per tonne of A beets and € 43.42 per tonne of B beets. Production above the national quota (C sugar) is purchased at world market price.

In the Netherlands in 2004, approximately 220 farms received payments amounting to € 103 million (of which € 133,000 went to foreign businesses). A geographic distribution of this amount had to be calculated.

Methodology

In 2004, 14,000 farms in the Netherlands cultivated about 97,250 hectares of sugar beets (GIAB, 2004). With an average production of 61 tonnes of beets per hectare with a sugar content of 17%, the available sugar quota was drastically exceeded. For convenience, we assumed that all of the producers contributed equally to this overproduction. The sugar subsidy paid in 2004 (€ 103 million) was divided by the number of hectares on which sugar beets were cultivated. This comes to € 1,067 per hectare. We then multiplied this amount by the number of hectares of sugar beets cultivated by each producer. These figures were then aggregated per postal code area and mapped.

For the historic entitlement model, we based our calculations on the agreed national sugar 'envelope' (portion of the subsidy budget that is still coupled to production) of € 72 million (or 64.42% of the 1994 budget). This came to € 687 per hectare of sugar beets. The geographic distribution of these payments was the same as in the 2004 situation.

3.5 Grains

The EC regulation for grain comprises separate regulations for the internal market and for trade with third countries. Products that qualify for this regulation are sweet corn, soft wheat, spelt, rye, barley, oats, maize, sorghum, buckwheat, millet and reed canary grass. The starch industry also falls under the types of agrarian businesses that qualify for grain subsidies.

3.5.1 Starch potatoes: € 66.6 million

Support is provided to farmers who cultivate potatoes intended for the production of starch. Payments are based on the volume of potatoes needed to produce 1 tonne of starch. An amount of € 110.54 was set for the market season 2004/2005. In subsequent years 40% of the support will be decoupled from volume of production. The other 60% will remain coupled and will be paid out only if the starch potatoes are actually cultivated and delivered. The payment amount will thus decrease to € 66.32 per tonne. The support is only paid out for the volume of potatoes for which a cultivation contract exists between the potato producer and the starch manufacturer. No exact data are available on which farmers have such contracts and for how many potatoes.

Methodology

GIAB data allowed us to map the number of hectares under starch potatoes and their locations. The total amount of subsidies received by the potato starch processing industry was divided by this number of hectares. The resulting amount per hectare (€ 1,490) was then multiplied per starch potato farm by the corresponding number of hectares and allocated per farm to a postal code area.

For the historic entitlement model, we based our calculations on a payment per tonne of starch amounting to 60% of the 1994 payment, or € 66.32 per tonne of starch. The national envelope would then amount to € 49 million (i.e. 60% of the total sugar budget in 2004); this was distributed in the same way as for the situation in 2004.

3.5.2 Other starch crops

The other starch crops are not relevant for the Netherlands, as their cultivation area is minimal.

3.5.3 Other measures: € 22.9 million

The remaining amount of € 22.9 million was made up almost entirely of export restitutions. Maize from France and wheat from Southern Germany and France enter the Netherlands and are processed here into starch and then sold on the European or world markets. Although the subsidies are paid to Dutch processors, they cannot be coupled to hectares in the Netherlands (H.W.A. Diepenhorst, personal communication).

3.6 Arable crops

The Netherlands is divided into two production regions. A standard yield of 7.08 tonnes per hectare is expected in production region 1, whereas the standard expected yield in region 2 is lower at 4.92 tonnes. This does not apply to maize, for which the same yield of 6.66 tonnes per hectare is expected in both regions. Because the yields per region differ, the subsidies per region also differ. The conditions for receiving area support and the corresponding amounts can be found in Laser (2004).

3.6.1 Area support for protein crops: € 1.3 million

These payments apply to peas, faba beans and broad beans, cupucijner peas and sweet lupin. The support was € 501.61 per hectare in region 1 and € 365.33 per hectare in region 2. Since the payments were made directly to the producers, we were able to derive the geographic distribution directly from the database.

3.6.2 Area support for grains: € 75.9 million

The size of the subsidy for grains differed per production region and amounted to € 446.04 per hectare in region 1 and € 308.96 per hectare in region 2. The surface area of the plot had to be greater than 0.3 hectare to qualify for this subsidy. This regulation applies to the following crops: wheat, rye, barley, oats, sorghum, buckwheat, millet, reed canary grass, triticale, quinoa and teff. Since the subsidy was paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

3.6.3 Area support for linseed: € 2.3 million

The size of the subsidy for linseed differed per production region and amounted to € 446.04 per hectare in region 1 and € 308.96 per hectare in region 2. Since the subsidy was paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

3.6.4 Area support for maize: € 80 million

The subsidy amounted to € 419.58 per hectare of maize and was consistent throughout the Netherlands. One condition for this subsidy is that the plot of land cultivated with maize must cover at least 0.3 hectare. Since the subsidy was paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

3.6.5 Area support for oil seeds: € 0.3 million

The size of the subsidy for oil seed crops (cole seed and rape seed, soy beans and sunflower seeds) differed per production region and amounted to € 446.04 per hectare in region 1 and € 308.96 per hectare in region 2. Since the subsidy was paid directly to individual

producers, the geographic distribution of these payments could be determined directly from the database.

3.6.6 Area support for mandatory fallow land: € 8.4 million

Land is classified as being mandatory when a producer requests a subsidy for an area that would be necessary to produce more than 92 tonnes. This corresponds to an area greater than 12.99 hectares of arable crops in production region 1, and greater than 18.69 hectares of arable crops in production region 2, or an area greater than 13.81 hectares of maize in either of the regions. There are a number of ways to set parcels of land aside: as 10-metre fallow, black fallow, fallow with non-food/non-feed crops (perennials or annuals) and fallow with feed legumes (Laser, 2004). The payments per hectare in 2004 amounted to € 446.04 and € 309.96 in regions 1 and 2 respectively, with the exception of black fallow for which the payments were € 334.53 and € 232.47 respectively. Since the subsidy was paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

3.6.7 Area support for fibre crops: € 2.4 million

The size of the subsidy for fibre crops (fibre flax and fibre hemp) differed per production region and amounted to € 446.04 per hectare in region 1 and € 308.96 per hectare in region 2. A processor of fibre flax requesting this subsidy may also qualify for an EC processing subsidy through the Chief Commodity Board for arable farming products. Since the subsidy was paid directly to individual producers, the geographic distribution of these payments could be derived directly from the database.

3.6.8 Area support for voluntary fallow land, including set-aside land: € 1.4 million

In all cases, producers are free to leave parcels of land fallow. The conditions for land left fallow voluntarily are the same as for mandatory fallow land. There is no limit to the number of hectares that can be left fallow voluntarily. The set-aside scheme was a voluntary regulation implemented in 1992 that preceded the mandatory fallow regulation. Temporary forests (for wood production) usually cover parcels that were set aside. In both cases, payments are made directly to producers.

3.7 Other regulations

No geographic distributions were calculated for regulations involving vegetables and fruit (€ 53 million), other vegetable products (€ 38 million), fishery products (€ 0.5 million) and pigmeat, eggs, poultry and other animal products (€ 9 million). These sectors were excluded for the following reasons.

a) Vegetables and fruit: the subsidies cannot be traced to the individual crops and recipients. The regulation mentions among other things the processing of tomatoes and pears. This money goes to the processor, who passes it on to the producer. The two parties negotiate a price, which is not set by the EU.
b) Other vegetable products and other measures: the subsidies cannot be traced to the individual crops and recipients.
c) Fishery interventions: the amount in question is very small.
d) Pigmeat, poultry, eggs, and other animal products: the subsidies cannot be traced to the individual sectors and recipients.

Compared to those in the first pillar, payments made for regulations in the second pillar were relatively limited (€ 68 million in 2004), and this amount is co-financed by the Netherlands. Second pillar regulations were therefore not included in this analysis.

3.8 Allocation variations

Aside from the geographic distribution of the payments granted in 2004, we also calculated what the distribution would look like if payments were based on the historic entitlement model or the flat rate model. In addition to these two models, variations were calculated by coupling part of the budgets to non-trade concerns.

3.8.1 Historic entitlement model

This is the system of single farm payments implemented in 2006. The amounts granted were based on the reference period 2000-2002. Since the average payments in the years 2000-2002 were comparable to those in 2004, the 2004 data were used to calculate payments according to the historic entitlement model, with the exception of dairy products, sugar and starch. For these three sectors, we applied the 40% reduction expected for the 2006-2009 period. The subsidies for dairy products, sugar and starch were explained in previous sections and they are included in the table below.

Payments for	Situation in 2004	Historic entitlement model
Milk and dairy (€ /kg)	0.06	0.036
Sugar (in million €)	104	72
Starch (€ /tonne of starch)	110.54	66.32

3.8.2 Flat rate model

This model allocates an equal amount per hectare of agricultural land. The total payments to be made under the historic entitlement model were divided equally among the total number of hectares of agricultural land. According to our calculations, this amounts to about 2,046,000 hectares of agricultural land and almost € 916.3 million in payments. The flat rate would thus be € 448 per hectare. One consequence of choosing to implement the flat rate would be that support would also go to farmers who currently do not qualify for subsidies. With reference to the flat rate, those who would get the payments are therefore usually not referred to as recipients but as potential recipients or simply farms. The number of potential recipients was calculated as the maximum number of farms in a postal code area according to the GIAB database and the number of direct recipients according to the ministry's database. The total comes to about 90,000 farms.

3.8.3 Non-trade concerns

Three categories of non-trade concerns were considered in this study:

- *Production circumstances:* producers classified as recipients of SAN or NS subsidies from the Dutch government for agricultural nature conservation or permanent nature conservation (Map 1a).

Farms that receive these direct payments were selected from the EU databases. The SAN scheme allocates subsidies for conservation of natural handicaps in the landscape or for protection and development of natural and rural landscape values on agricultural land. The SN scheme promotes conservation of the existing natural environment or the creation of natural landscapes in areas whose primary function is as nature or forests. The total area managed by direct recipients of these subsidies was 180,000 hectares.

- *Landscape quality:* land located in areas classified as a National Landscape (Map 1b).

In February 2006, the Upper House of the Dutch parliament approved the Policy Document on Spatial Planning. This led to an adjustment of the National Landscapes (including the Hoekse Waard, except areas located in Friesland). The adjustment applied to a total area of 465,000 hectares.

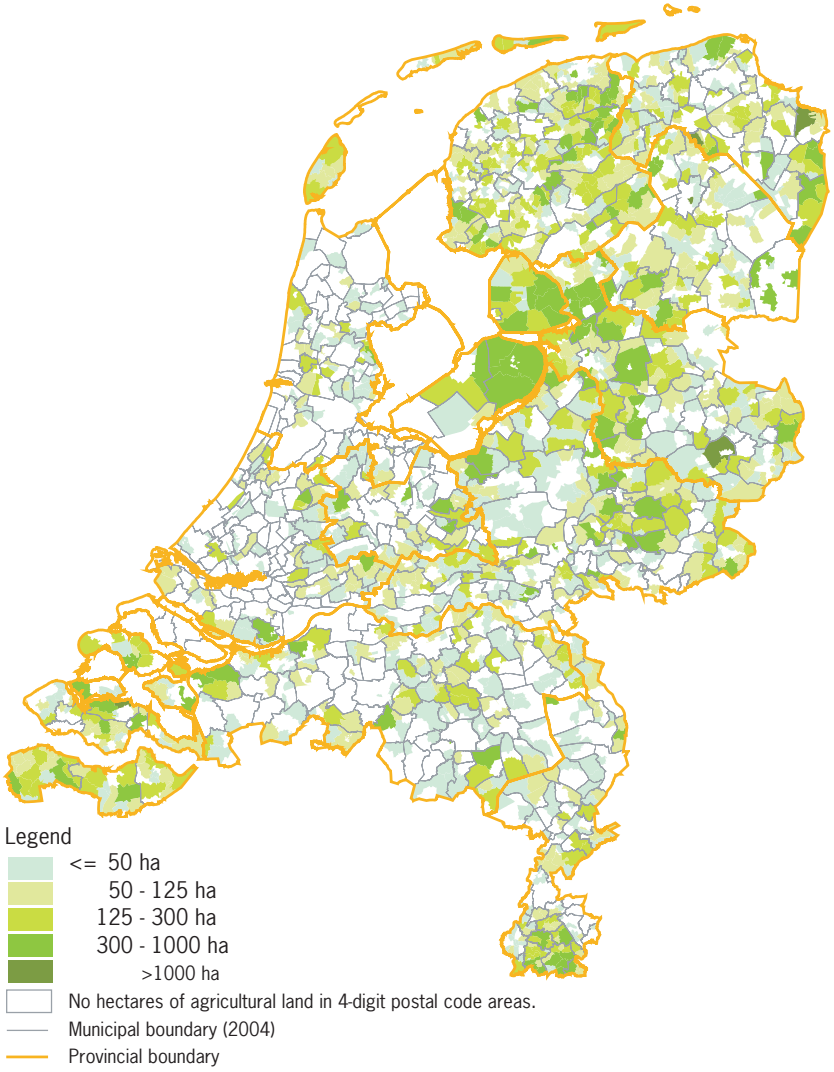
- *Sustainable production methods:* agrarian businesses classified as certified organic farms (52,000 ha).

Certified organic farms listed in the GIAB database were selected. These farms cover a total area of 52,000 hectares.

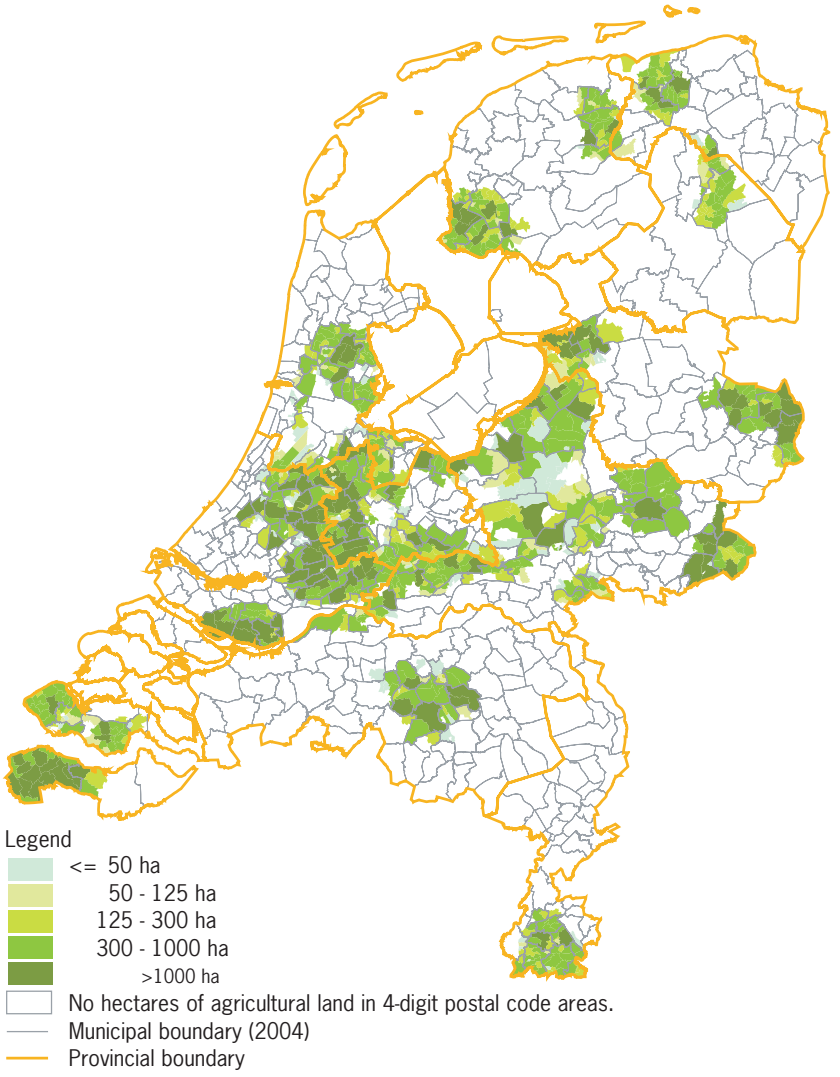
Points are allocated per category. The total number of points to be allocated in the Netherlands was divided over the budget that was made available by skimming the top off of payments (modulation) calculated according to the two allocation models. In this study every hectare that satisfied a non-trade concern was awarded one point. The categories were thus not weighted for extra importance. We also chose not to consider any other categories of non-trade concerns. A hectare that was organic, located in a designated National Landscape area, and retained natural handicaps would thus be awarded three points.

In this study, 698,207 points were awarded, which corresponds to the total number of hectares in the three chosen categories (Map 1d). As a result of this approach, it was calculated that a little more than 25% of the available 'skimmed' money would go to protected areas, almost 67% would go to National Landscapes and 7.5% would go to organic farms.

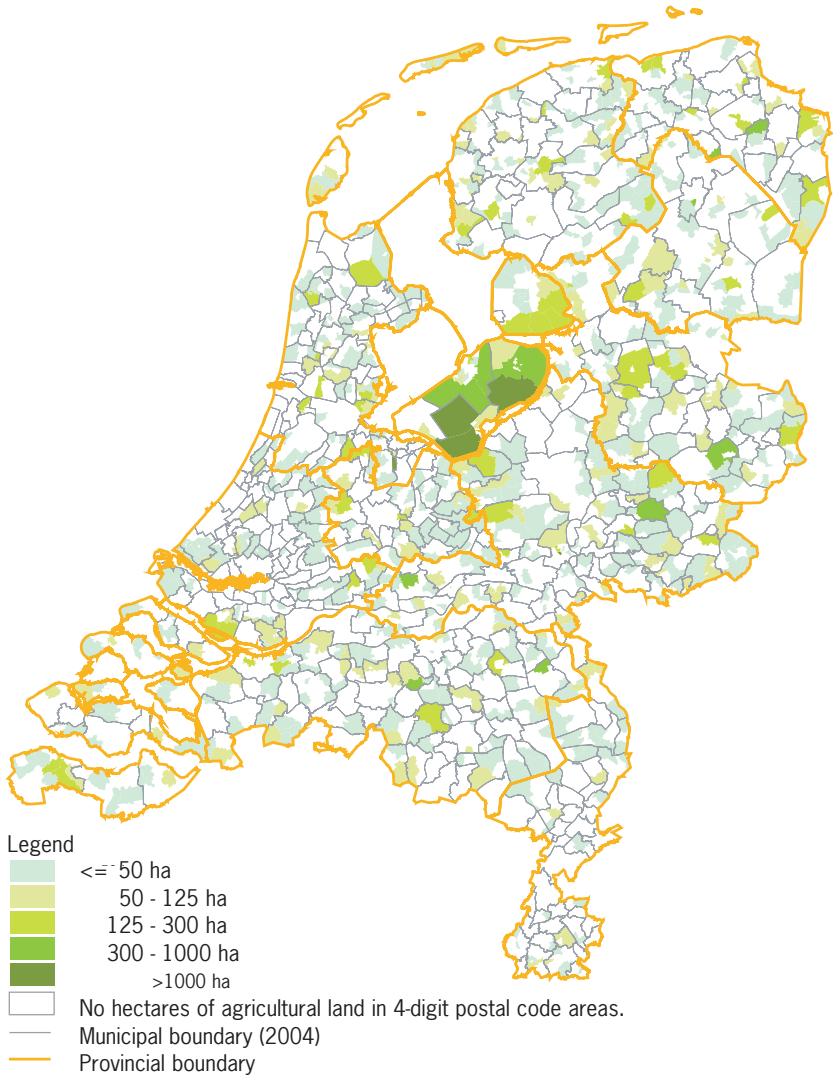
The budget made available for non-trade concerns was calculated in two



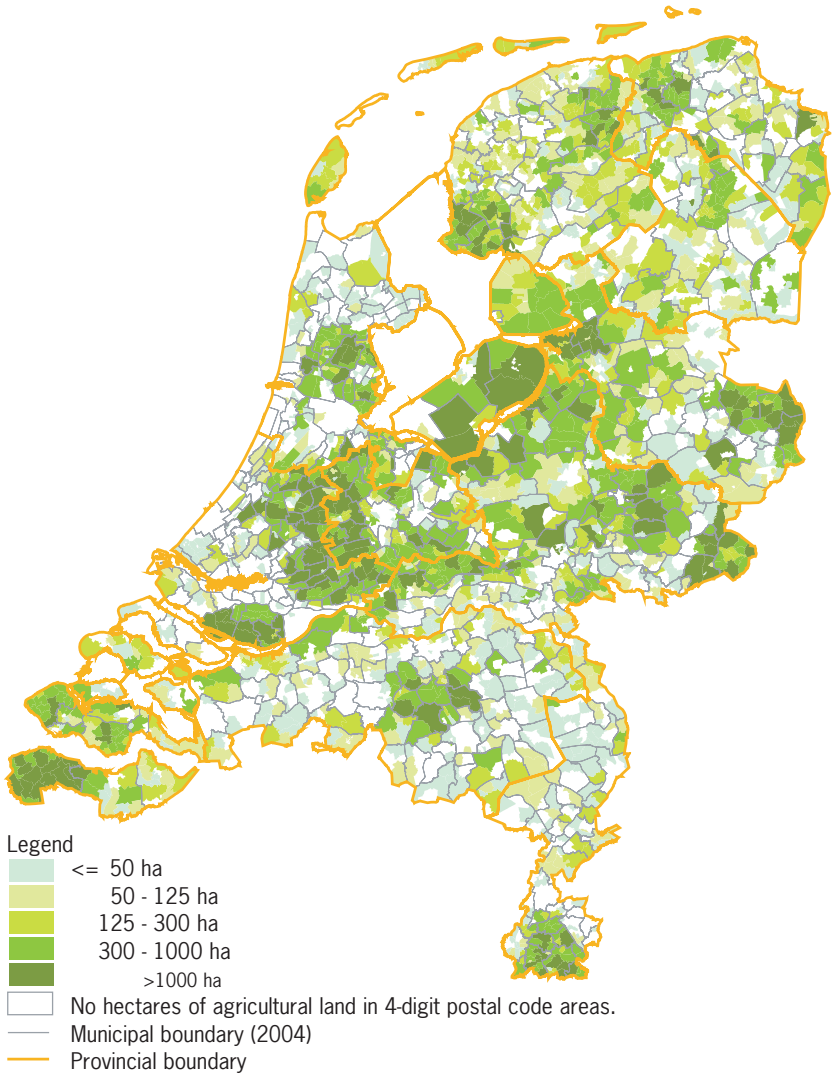
Map 1a. *Hectares of agricultural land managed by recipients of SAN or SN subsidies per postal code area in 2004*



Map 1b. *Hectares of agricultural land in National Landscape areas per postal code area in 2004*



Map 1c. *Hectares of agricultural land on certified organic farms per postal code area in 2004*



Map 1d *Hectares of agricultural land that satisfy non-trade concerns per postal code area in 2004*

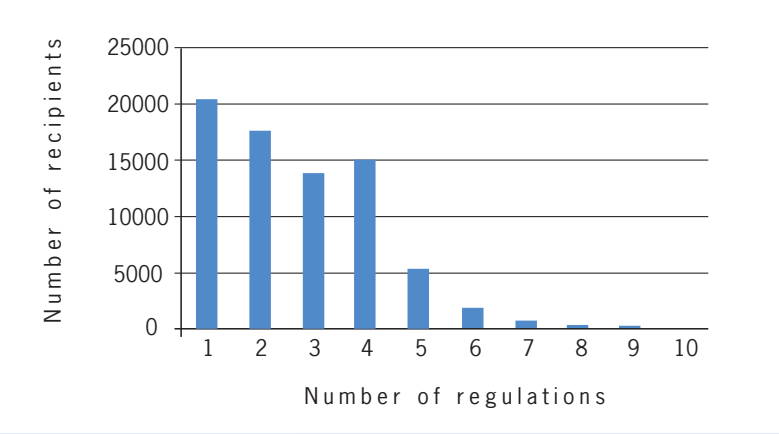
ways: through modulation whereby either 20% or 50% of the total amount of direct payments was skimmed off the top and redirected, and by limiting single payments to a maximum of € 40,000 and redirecting the amounts above this that would otherwise have gone to large farms.

4 Results

4.1 General

The overview of EU subsidies allocated to the Netherlands from the CAP budget shows that:

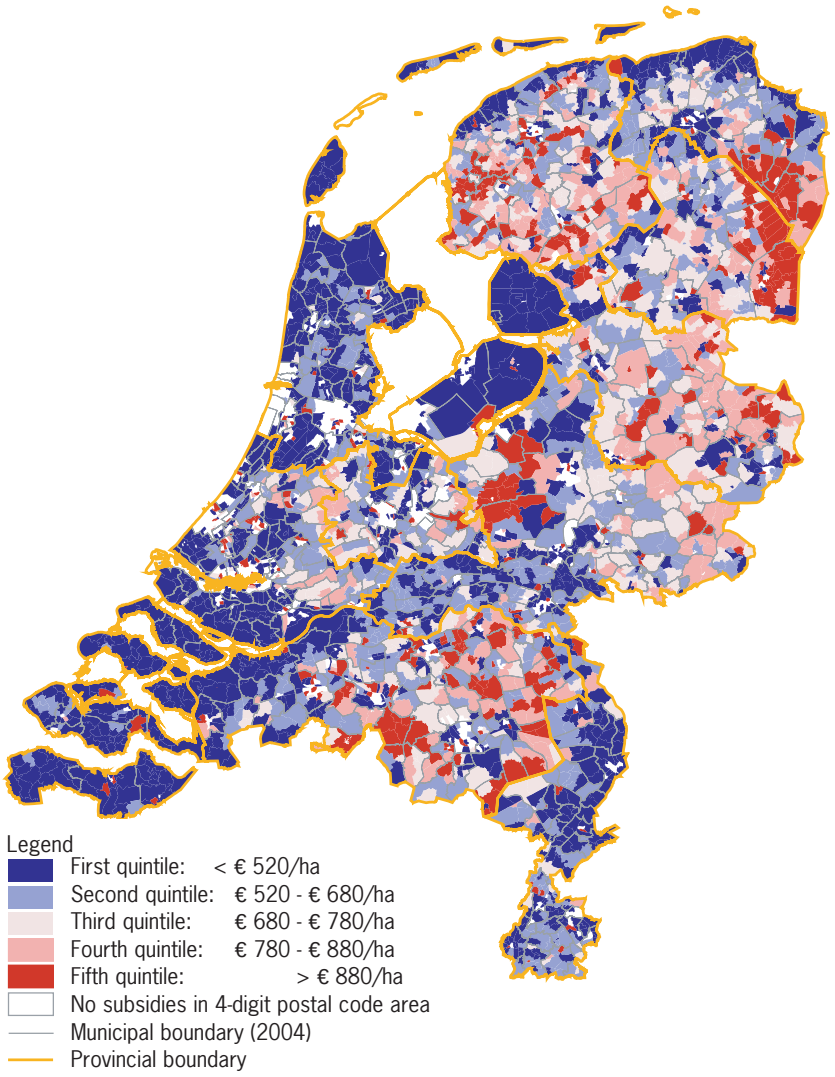
- In 2004, actual payments were made for 32 first pillar regulations.
- 19 of these payments, including those for milk and dairy, sugar, and starch, represented direct payments. The remaining regulations involved intervention and restitution payments.
- The total budget in 2004 for the 19 direct payment regulations was about € 1.2 billion, more than half of which (€ 650 million) was allocated for dairy products. Intervention and restitution payments amounted to about € 300 million.
- About 75,900 primary producers received direct payments through these regulations. About 525 recipients were living outside of the Netherlands.



- 27% of the recipients received support through one regulation, but 11 recipients benefited from 10 regulations (see chart).
- The most popular regulation was the slaughter premium (40,400 recipients), followed by the area support for maize (30,700 recipients).
- 3,330 recipients received payments above € 40,000; 14 of them received payments above € 1 million. In principle all of these recipients were primary producers.
- Almost 70,000 recipients (92%) were listed in the GIAB database.
- The recipient of the largest sum (> € 1 million) was a root crop farm in the eastern part of the country. Two calf feedlots and two grazing livestock farms were also in the top five.

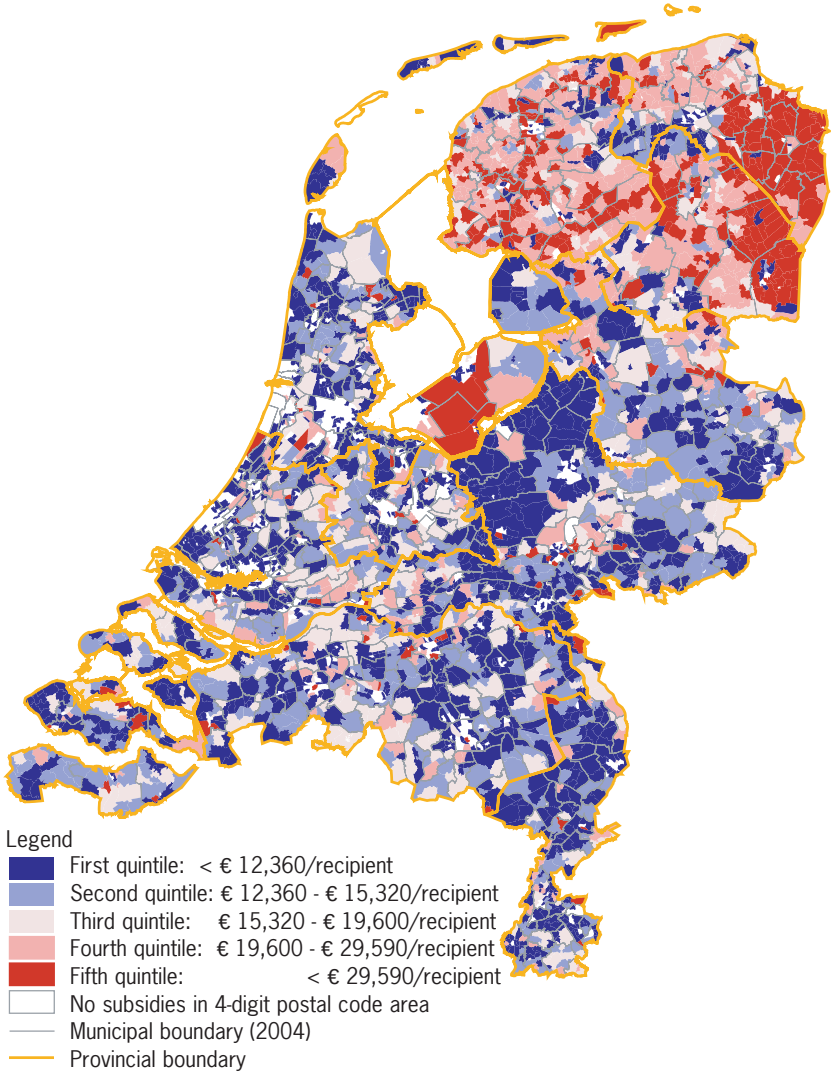
4.2 Situation in 2004

Map 2 shows the geographic distribution of the direct payments (expressed in euros per hectare of agricultural land) from the first pillar of the CAP over postal code areas in 2004. The total budget of direct payments in the first pillar amounted to € 1.239 billion. These payments were coupled to 2.021 million hectares of agricultural land. The map shows five groups of postal code areas based on the amounts received per hectare and the proportion of the total budget they represent. The dark-blue areas received a relatively low amount per hectare and together represent one-fifth of the total budget. The red areas, on the other hand, received the highest amount per hectare, but together also represent one-fifth of the total budget. The dark-blue areas thus cover more hectares of agricultural land than the red areas.



Map 2. *Total direct payments (□/ha of agricultural land) from the first pillar of CAP subsidies to postal code areas in 2004*

From Map 2 and Table 4.1 we can see that the postal code areas that received the highest payments per hectare (the dark-red areas) cover approximately 10% of the agricultural land (222,000 ha). This involves primarily the Veenkoloniën (starch potatoes and sugar beets), the Gelderse Vallei (calf sector), and a few areas in North Brabant, Friesland and Overijssel (dairy cattle farms and maize) These postal code areas received at least € 880 per hectare of agricultural land. The average payment in these areas (those that have at least 10 hectares of agricultural land) was € 1,110 per hectare, and some were as high as € 10,000 per hectare. These exceptions can be attributed to the very small number of hectares in the postal code areas corresponding to the postal addresses of these farms. The land is probably located in an adjacent postal code area, but no corrections were made for this in the calculations. The postal code areas with the lowest payments per hectare (the dark-blue areas) cover about 37% (750,000 hectares) of the total agricultural land. These postal codes are located primarily in the provinces of North Holland, Zeeland, Flevoland, Limburg, the northern areas of the provinces of Friesland and Groningen, and along the Netherlands' large rivers (the rivierengebied). Every hectare of agricultural land in these areas received on average € 330 up to a maximum of € 520. These are mostly farms in the arable crop, horticulture and permanent crop sectors. Other areas, such as the 'Green Heart' (rural area surrounded by the major cities of Amsterdam, Rotterdam, Den Haag and Utrecht), pasture areas in the provinces of Utrecht, Gelderland and Overijssel, and parts of the north received an amount falling somewhere between these extremes.



Map 3. *Total direct payments (□/recipient) from the first pillar of CAP subsidies to postal code areas in 2004*

Map 3 shows the 2004 geographic distribution over postal code areas of the direct payments from the first pillar of the CAP, expressed in euro per recipients. The € 1,239 million in direct payments from the first pillar was granted to 75,391 recipients (Table 4.1). The group receiving the highest payments (€ 30,000 or more) consisted of 5,540 recipients (7% of the total) located primarily in the Veenkoloniën and other areas in the north and Flevoland. More than one third of the recipients (almost 27,000) are in the group receiving the lowest payments (an average of € 9,190 and a maximum of € 12,360) located in the Gelderse Vallei, northern Limburg and parts of North Brabant.

Table 4.1 Number of hectares of agricultural land, average payment (□) per hectare and corresponding recipients; number of recipients and average payment (□) per recipient with corresponding number of hectares, situation 2004.

	Situation 2004 Per hectare of agricultural				Situation 2004 Per recipient			
	Number of hectares (in thousands)	Average amount per hectare (□)	Corresponding number of recipients	Corresponding average payment per recipient (□)	Number of recipients	Average payment per recipient (□)	Corresponding number of hectares (in thousands)	Corresponding average payment per hectare (□)
First quintile	750	330	19,940	12,414	26,970	9,190	533	460
Second quintile	408	610	17,340	14,300	20,680	11,990	421	590
Third quintile	340	730	15,060	16,440	14,390	17,200	393	630
Fourth quintile	301	825	13,110	18,910	10,530	23,580	356	700
Fifth quintile	222	1,100	9,750	25,290	5,543	44,590	318	780
Total average	2,021	610	75,391	16,430	75,391	16,430	2,021	610
Total		1,239 million		1,239 million		1,239 million		1,239 million

4.3 Historic entitlement model

Map 4 shows the geographic distribution over postal code areas of the direct payments from the first pillar of the CAP, calculated according to the historic entitlement model (i.e. the situation as of 2006), expressed in euros per hectare of agricultural land. Since this already includes the reforms implemented for milk and dairy products, sugar beets, and starch potatoes in 2006 (a 40% reduction compared to the 2004 budget), the regions that depended heavily on subsidies for these products show a lower payment per hectare. The total budget available through this model variation is € 916 million.

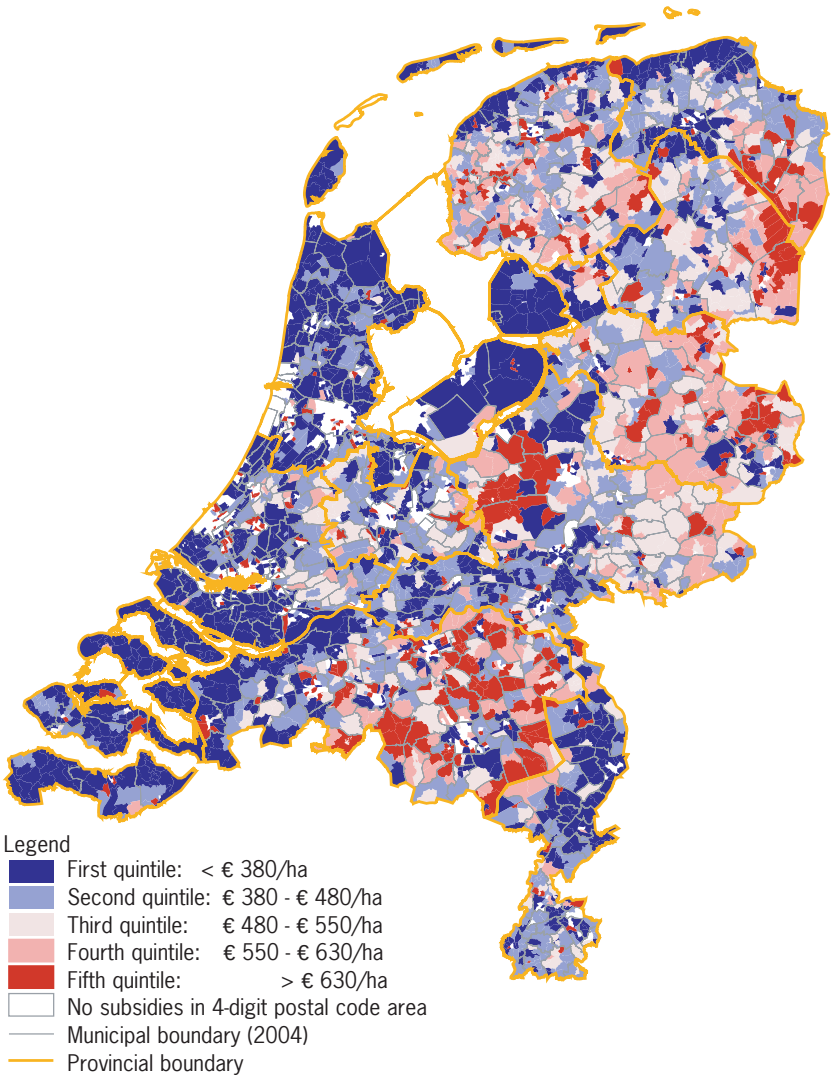
The group of postal code areas with the highest payments per hectare covers about 208,000 hectares of agricultural land (see Table 4.2). This group would receive at least € 630 per hectare with an average payment of € 880 per hectare. Compared to the situation in 2004, this represents a reduction of about € 230 per hectare (-21%). In the group of postal code areas with the lowest payments per hectares, representing about 743,000 hectares, recipients would receive an average of € 250 per hectare. This would be € 80 per hectare less (-24%) than they received in 2004.

Table 4.2 Number of hectares of agricultural land, average payment (□) per hectare and corresponding recipients, number of recipients and average payment (□) per recipient with corresponding number of hectares according to the historic entitlement model

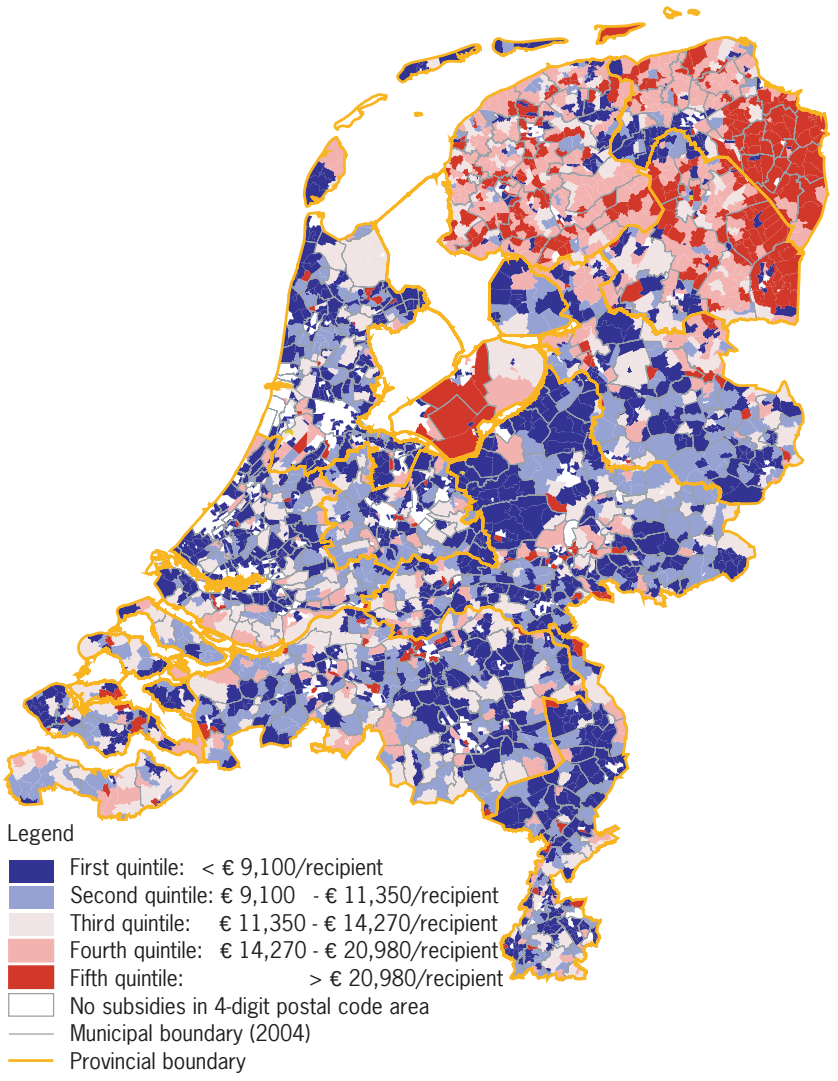
	Historic entitlement model Per hectare of agricultural land				Historic entitlement model Per recipient			
	Number of hectares (*1000)	Average payment per hectare (□)	Corresponding number of recipients	Corresponding average payment per recipient (□)	Number of recipients	Average payment per recipient (□)	Corresponding number of hectares (in thousands)	Corresponding average payment per hectare (□)
First quintile	743	245	19,100	9,590	26,375	6,950	512	360
Second quintile	421	440	16,580	11,075	10,030	10,160	405	450
Third quintile	355	515	15,425	11,850	14,600	12,550	408	450
Fourth quintile	314	585	13,700	13,390	10,930	16,760	379	480
Fifth quintile	208	880	10,350	17,600	5,445	33,660	316	580
Total average	2,021	450	75,391	12,150	75,391	12,150	2,021	450
Total		916 million		916 million		916 million		916 million

Map 5 shows the geographic distribution over postal code areas of the direct payments from the first pillar of the CAP, calculated according to the historic entitlement model, and expressed in euros per recipient. The direct payments from the first pillar based on this model (€ 916 million) would also be granted to 75,391 recipients (see Table 4.2). The group of recipients with the highest payments consists of 5,400 individuals, each of whom would receive at least € 21,000, and on average € 33,670 (-25% compared to 2004). The group with the lowest payments consists of 26,375 recipients, each of whom would receive on average € 6,950 (-24% compared to 2004), but no more than € 9,100. The geographic distribution would be nearly the same as in 2004.

This model was used as the reference against which the other allocation variations were compared to see how they would affect payment amounts.



Map 4. *Total direct payments (□/ha of agricultural land) from the first pillar of CAP subsidies to postal code areas calculated according to historic entitlement model*



Map 5 *Total direct payments (□/recipient) from the first pillar of CAP subsidies to postal code areas calculated according to historic entitlement model*

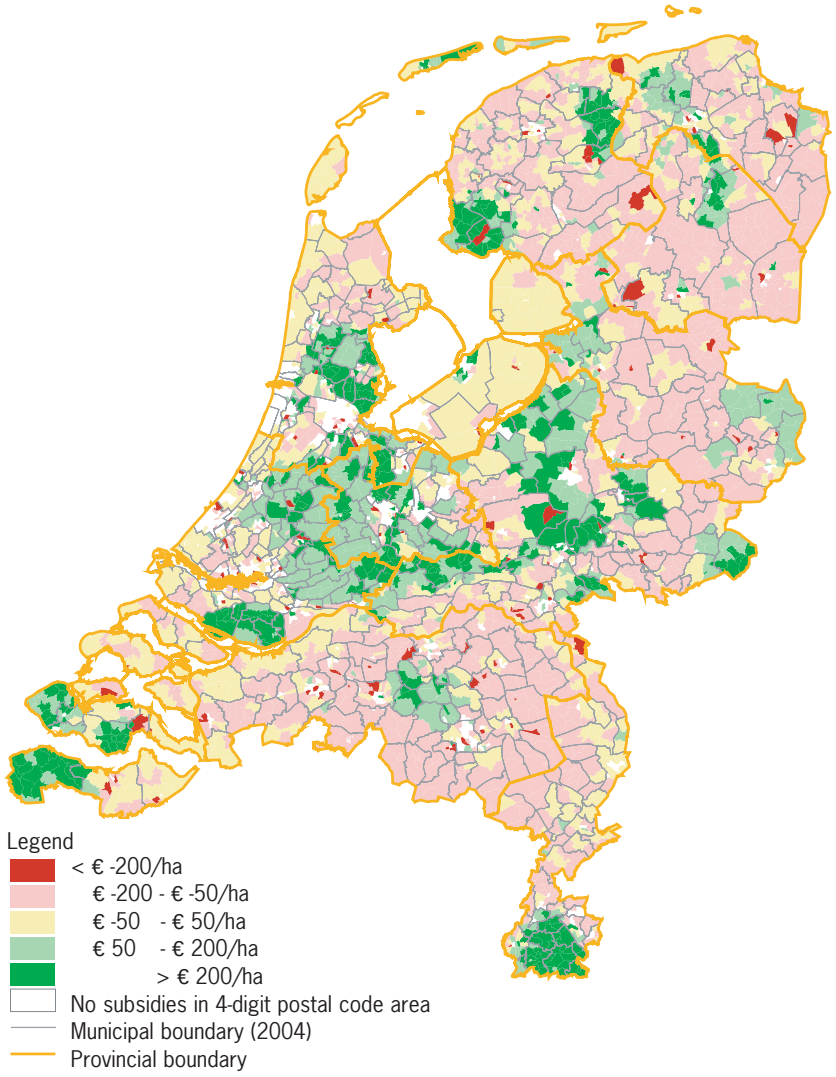
4.4 Historic entitlement model in combination with non-trade concerns

About 698,000 points would be available for distribution if all three non-trade concerns were considered in the allocation scheme.

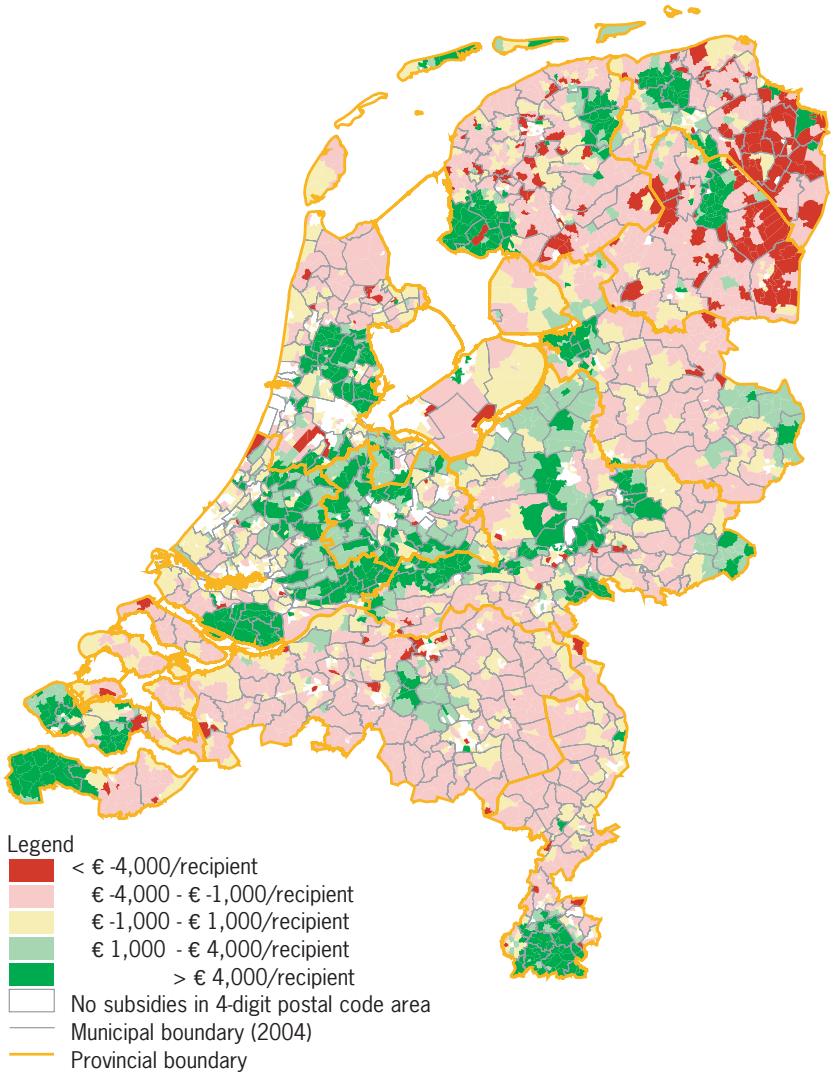
4.4.1 Twenty per cent of the budget available for non-trade concerns

The budget for the historic entitlement model is € 916.3 million, 20% of which (€ 183.3 million) can be skimmed from direct payments and redirected to organic farms, farms located in National Landscapes or farms that actively protect the rural environment. Based on this approach, every hectare that satisfies one of these conditions would receive a payment of € 262. Every hectare that satisfies two or three of these conditions would receive two or three times that amount.

Map 6 shows how the geographic distribution of direct payments from the first pillar of the CAP would change if 20% of the historic entitlement budget was used to reward satisfaction of conditions related to non-trade concerns. In areas where few, if any, farms qualify for this extra support, the payments per hectare would decrease. This would be the case for about 927,000 hectares of agricultural land, for which payments would decrease by € 50 to € 200. In areas where a relatively high number of farms satisfy these non-trade concerns, the payments would increase. Of course the National Landscapes would weigh heavily in this approach: the areas where payments would increase correspond therefore to a great extent with the boundaries of the National Landscapes.



Map 6. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of the CAP per postal code area if 20% of the historic entitlement budget was modulated and redirected*



Kaart 7. *Changes that would occur in direct payments (□/recipient) from the first pillar of the CAP per postal code area if 20% of the historic entitlement budget was modulated and redirected*

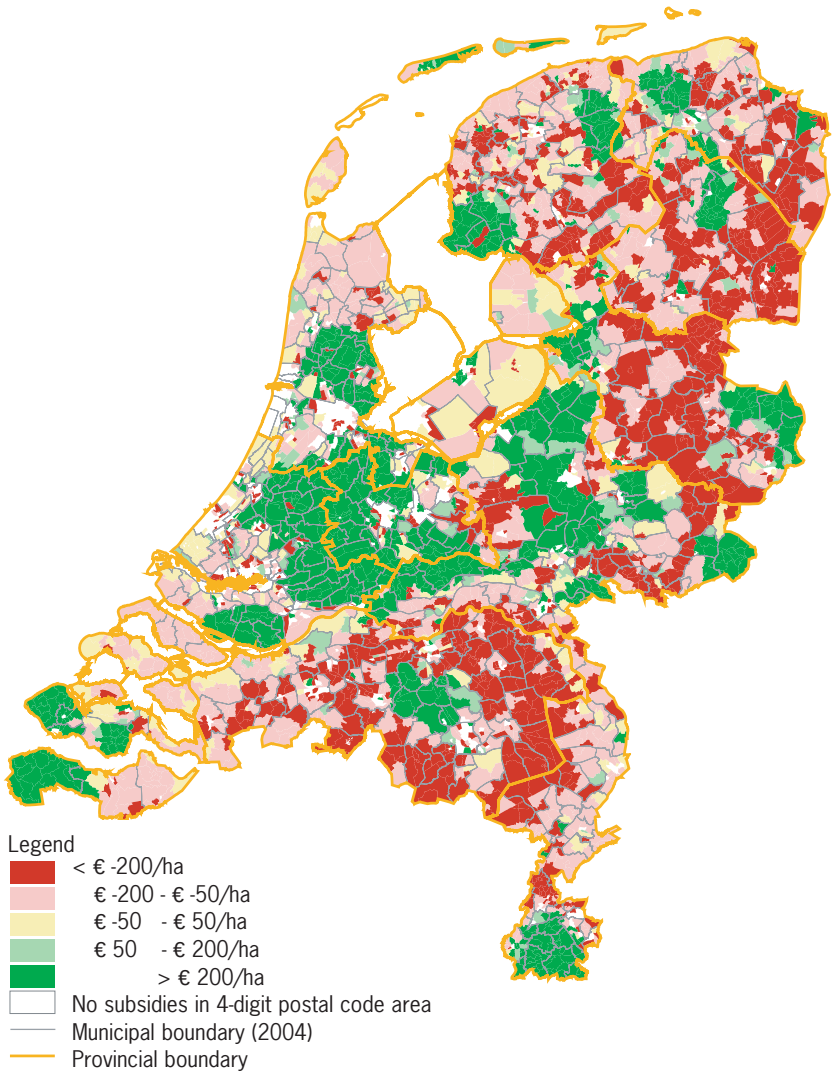
Map 7 shows how the amount per recipient of direct payments from the first pillar of the CAP would change per postal code area if part of the historic entitlement budget was used to reward satisfaction of conditions related to non-trade concerns. Farms in the north, in particular, would receive a lot less according to this approach.

4.4.2 Fifty per cent of the budget available for non-trade concerns

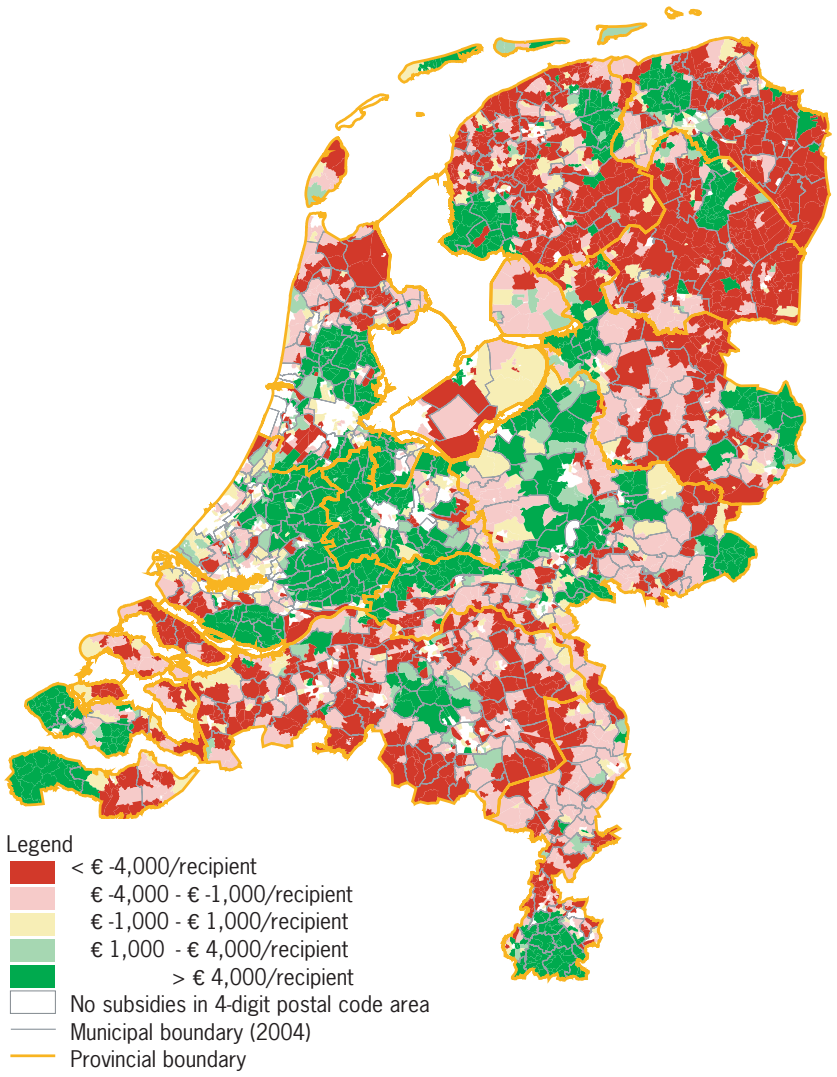
In this variation, 50% of the historic entitlement budget of € 916.3 million (thus € 458.1 million) would be modulated and redirected to organic farms, farms located in National Landscapes and farms that actively protect the rural environment. Every hectare of land that satisfies one of these conditions would receive an extra payment of € 656. Every hectare that satisfies two or three of these conditions would receive twice or three times that amount.

Map 8 shows how the amount per hectare of direct payments from the first pillar of the CAP would change per postal code area if 50% of the historic entitlement budget was used to reward satisfaction of conditions related to non-trade concerns. In many areas in the north, east and south-east of the country, where non-trade concerns play little or no role in agrarian business operations, the payments per hectare would decrease by more than € 200. We can see even more clearly than in Map 6 how greatly this approach would benefit areas where these aspects do play a role.

Map 9 shows how the amount per recipient of direct payments from the first pillar of the CAP would change per postal code area if 50% of the historic entitlement budget was used to reward satisfaction of conditions related to non-trade concerns. The green boundaries of the National Landscapes are even more clearly defined here: farmers in all the other areas of the country would pay the price for the higher payments that farmers in the National Landscapes could potentially receive.



Map 8. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of the CAP per postal code area if 50% of the historic entitlement budget was modulated and redirected*

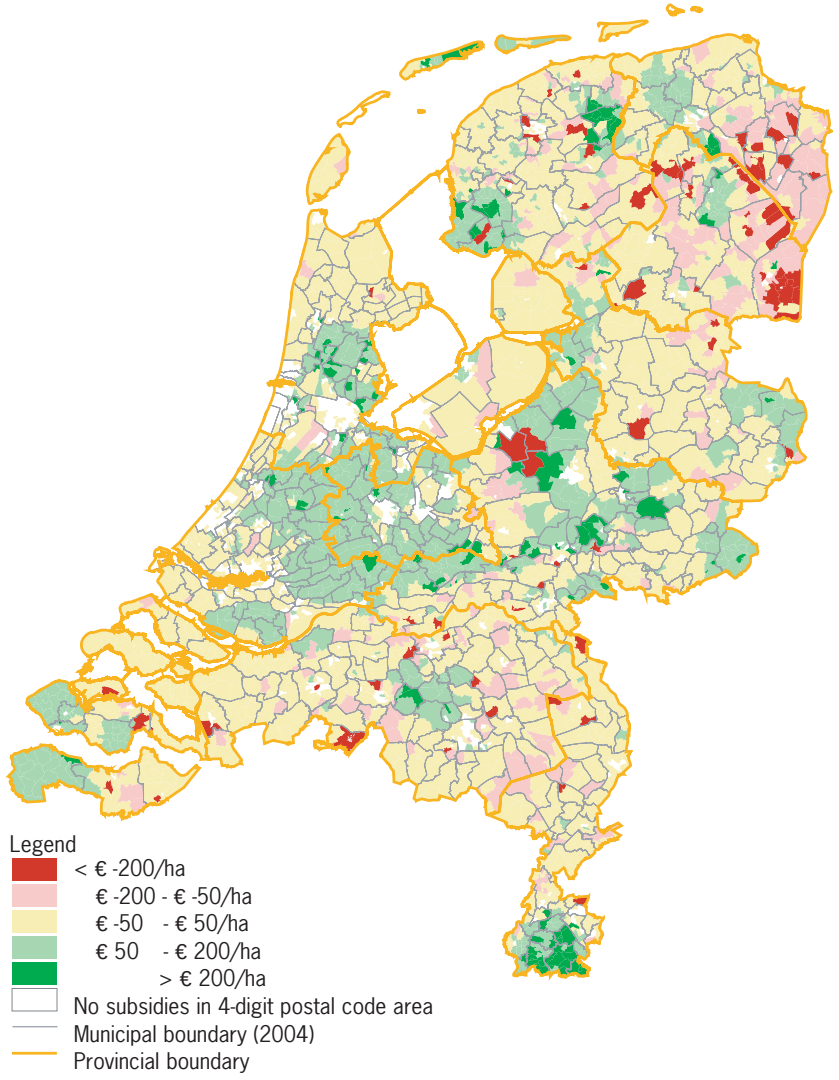


Map 9. *Changes that would occur in direct payments (□/recipient) from the first pillar of the CAP per postal code area if 50% of the historic entitlement budget was modulated and redirected*

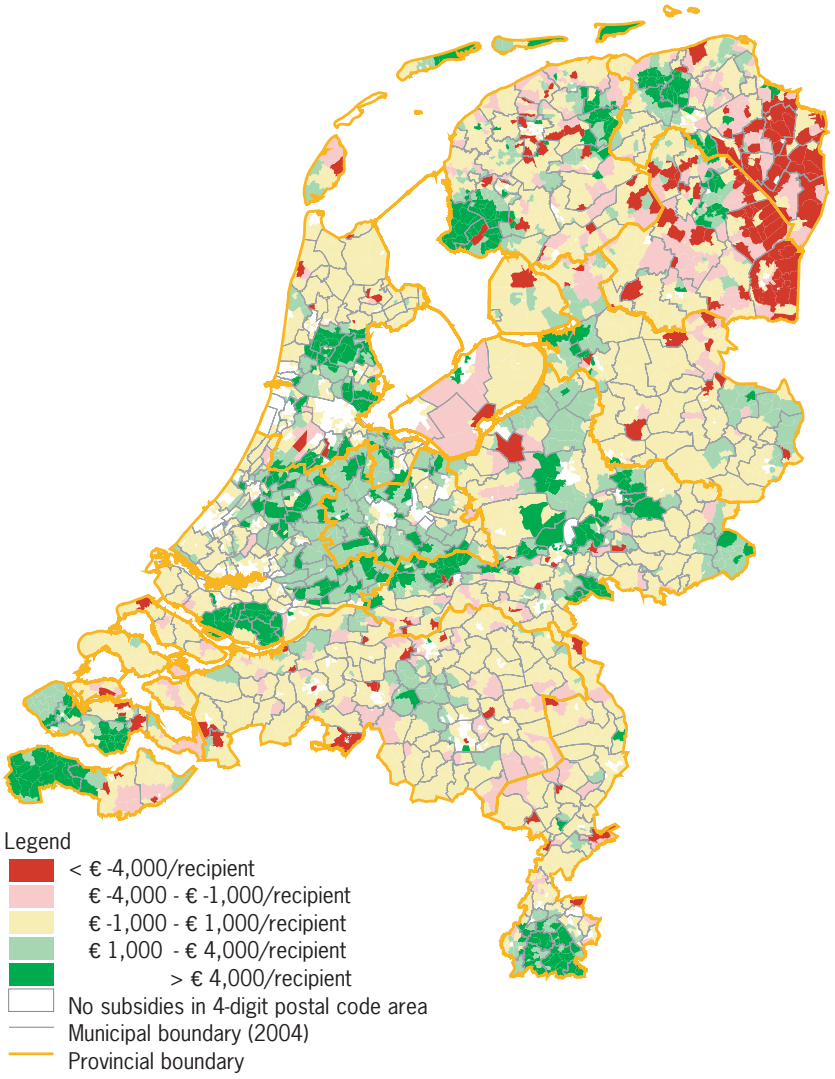
4.4.3 Single farm payments > € 40,000 modulated and redirected for non-trade concerns

In this variation, payments per farm are capped at € 40,000. If a farm normally received more than this, the excess would be skimmed off (modulated) and allocated according to a point system based on satisfaction of conditions related to non-trade concerns. The data indicate that 3,329 farms would receive more than € 40,000 according to the historic entitlement model. Skimming these payments would thus create an available budget of € 114.6 million. If this amount is divided by the 698,000 points available for satisfaction of conditions related to non-trade concerns, € 164 would be available for every hectare of land on which one of these conditions is met. This is about € 100 less than if the budget was modulated with a generic 20% reduction.

Maps 10 and 11 show how the geographic distribution of direct payments from the first pillar of the CAP would change per postal code area (based on the historic entitlement model) if payments were capped and redirected, expressed in € per hectare agricultural land and € per recipient. Unlike the other variations considered, this variation would affect only a small proportion of recipients. Most of the amounts per recipient or per hectare would thus remain the same. Recipients of large amounts are located in the Veenkoloniën (eastern areas of Groningen and Drenthe) and the Gelderse Vallei and they would be very much affected. Areas with a large number of farms that satisfy non-trade concerns are easily recognisable on the maps. They would receive higher payments in this variation than in the historic entitlement model.



Map 10. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of the CAP per postal code area if single farm payments above € 40,000 (calculated according to the historic entitlement model) were modulated and redirected*

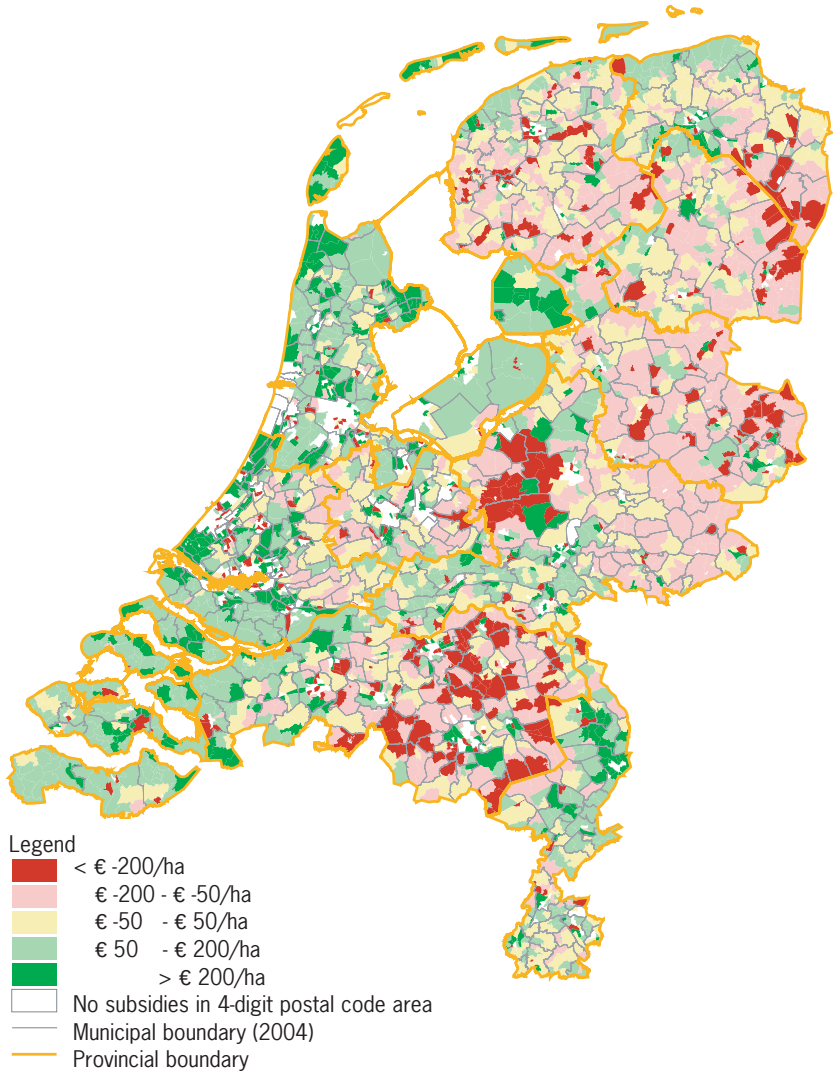


Map 11. *Changes that would occur in direct payments (□/recipient) from the first pillar of the CAP per postal code area if single farm payments above € 40,000 (calculated according to the historic entitlement model) were modulated and redirected*

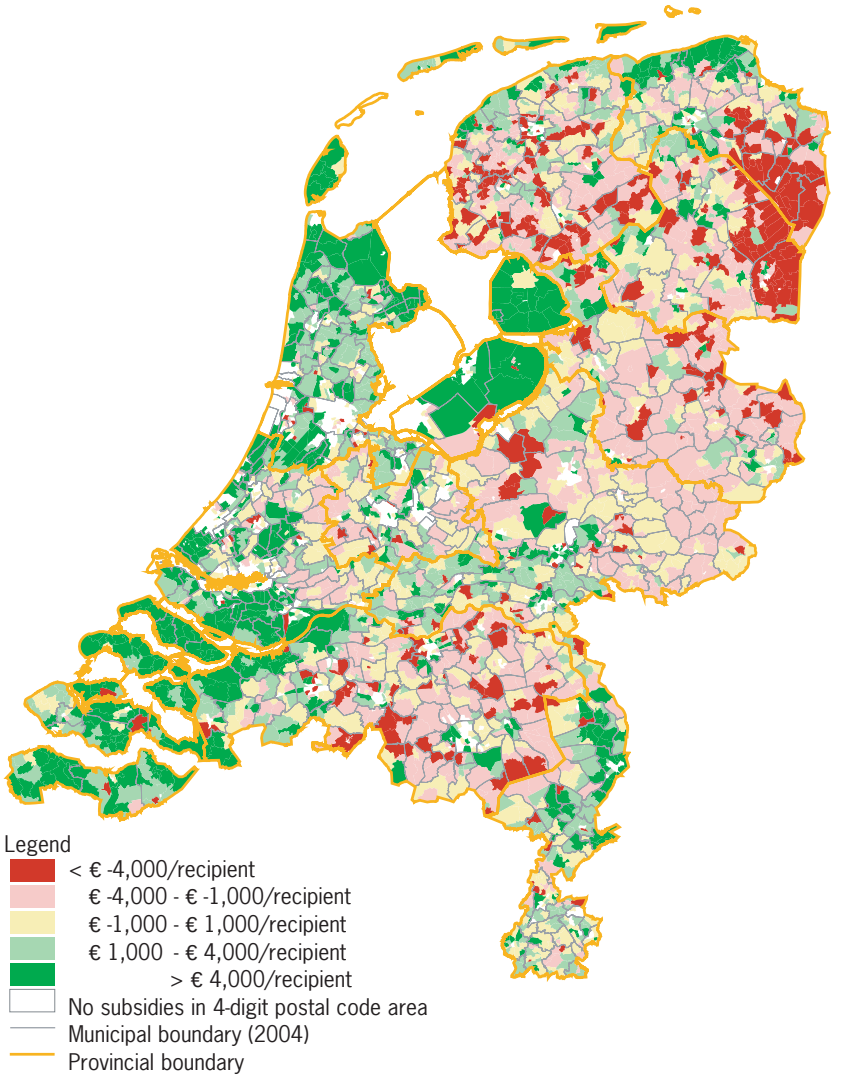
4.5 Flat rate model

Map 12 shows how the geographic distribution of direct payments from the first pillar of the CAP would change if the flat rate model was implemented as opposed to the historic entitlement model, expressed in amount per hectare of agricultural land. Since every hectare of land receives the same amount (€ 448) according to the flat rate model, areas in which farms would receive a higher amount than this according to the historic entitlement model would be detrimentally affected. These are the Veenkoloniën, the Gelderse Vallei and large parts of Friesland, Overijssel, Gelderland, North Brabant and the Green Heart. Areas that now receive much less than € 448 per hectare would benefit. These areas are located primarily in the province of Zeeland, large parts of North and South Holland, Flevoland, Limburg and the northern areas of Friesland and Groningen.

The same picture arises if the changes are expressed in terms of payment per recipient (see Map 13). It should be noted that the number of potential recipients in the flat rate model is larger than the number in the historic entitlement model (90,698 versus 75,391). This is because the flat rate model grants payments to farms and hectares that do not currently qualify for any subsidies.



Map 12. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of CAP subsidies per postal code area under the flat rate model (compared to the situation under the historic entitlement model)*



Map 13. *Changes that would occur in direct payments (□/recipient) from the first pillar of CAP subsidies per postal code area under the flat rate model (compared to the situation under the historic entitlement model)*

Changes would occur not only in the geographic distribution of payments, but also in the amounts granted to the various sectors. In general, the grazing livestock sector would receive less and all the other sectors more (Figure 4.2). The total budget for the whole grazing livestock sector would be 17% lower according to the flat rate model than according to the historic entitlement model. Figure 4.3 shows more clearly which types of farms would receive less and which types would benefit under the flat rate model compared to the historic entitlement model. The top five farm types that would stand to lose the most are highly specialised dairy cattle farms, calf farms, farms with other kinds of cattle, and specialised root crop farms. The five farm types that would stand to gain the most are those that grow other arable crops, those that maintain a herd of grazing livestock or other grazing animals or horses, those that cultivate other root crops and those that maintain pasture land.

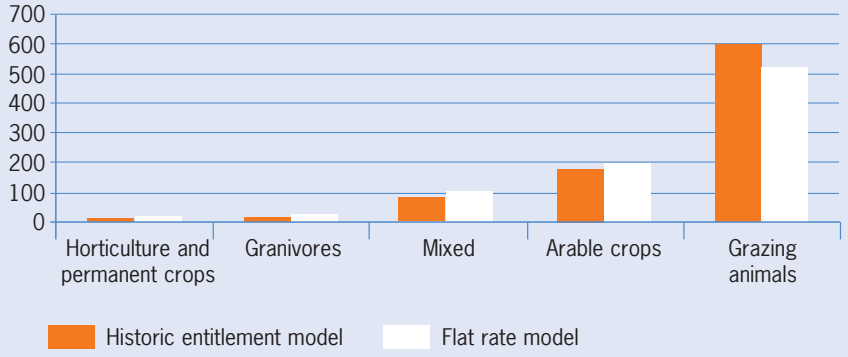


Figure 4.2 Budgets per sector under the historic entitlement model and the flat rate model (in million euros)

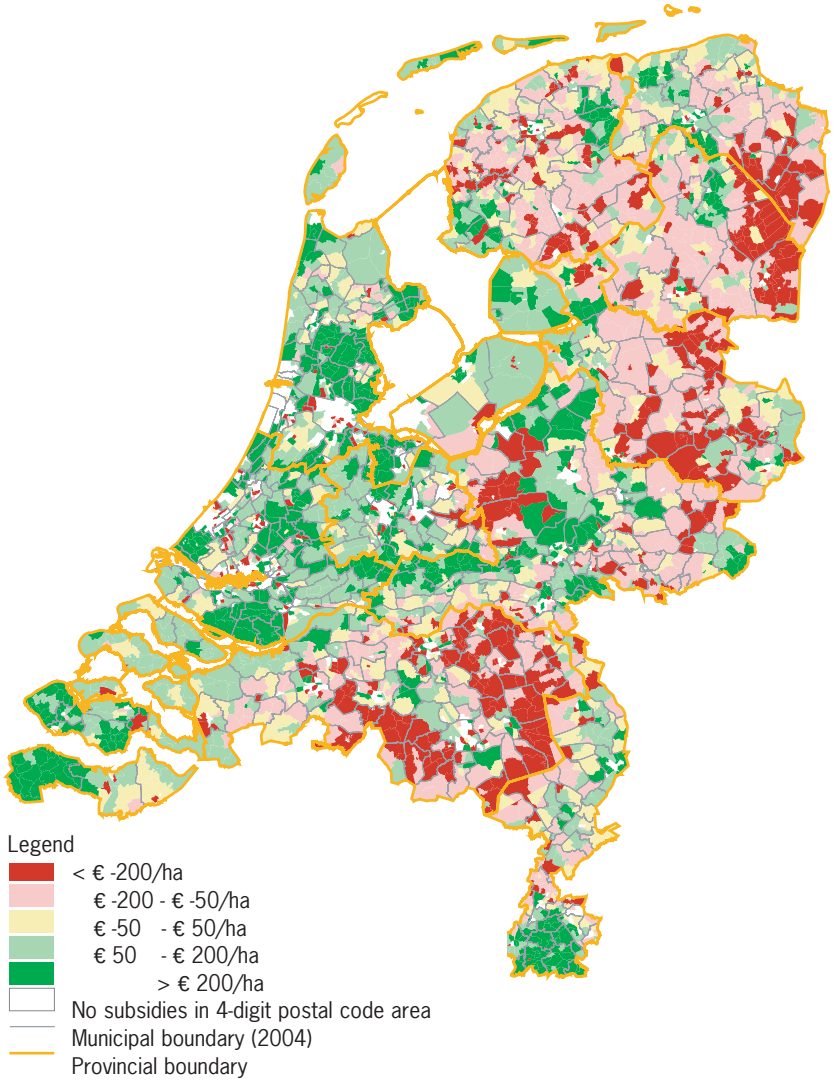
Figure 4.3 Change in the budget (in million euros) that would occur under the flat rate model (compared to the situation under the historic entitlement model)

4.6 Flat rate model in combination with non-trade concerns

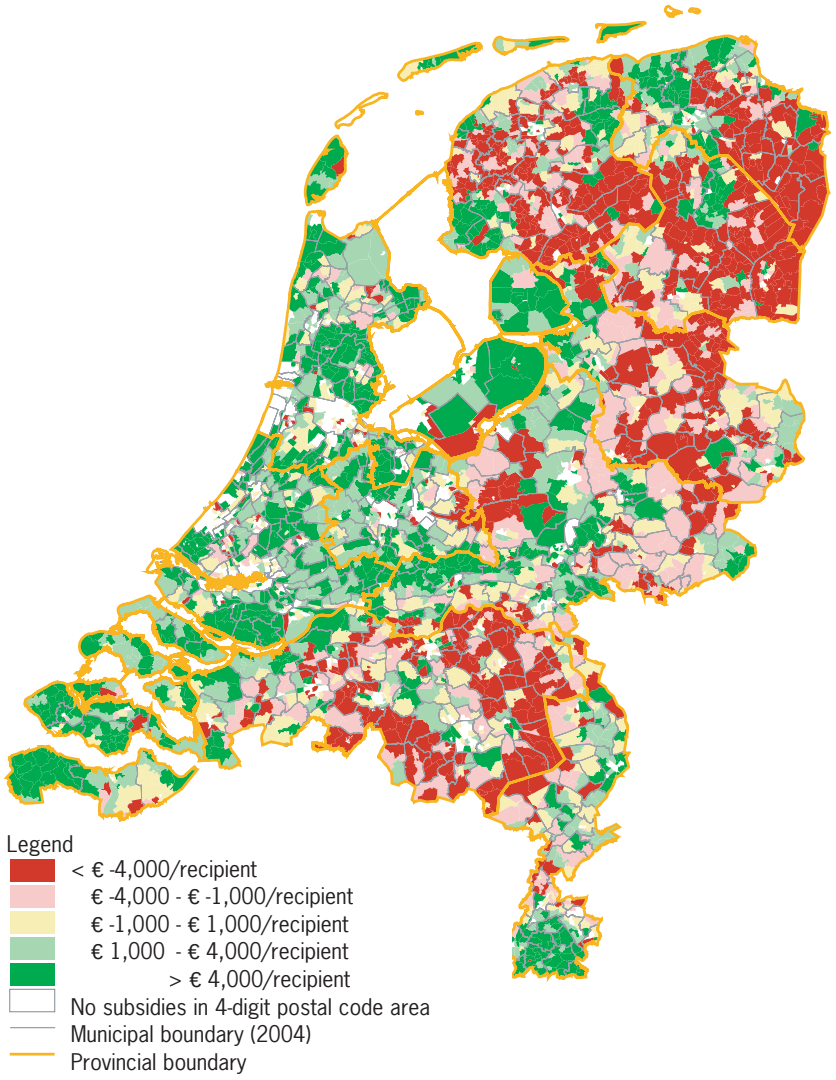
About 698,000 points would be available for distribution if all three non-trade concerns were considered in the allocation scheme. Since the total budget is the same for both the flat rate model and the historic entitlement model, the amount available per point would also remain the same, namely € 262 per hectare (= 1 point) if 20% of the budget was skimmed, and € 656 per hectare (= 1 point) if 50% was skimmed.

4.6.1 Twenty per cent of the budget available for non-trade concerns

In this variation, the flat rate amount of € 448 per hectare would be reduced by 20% (€ 90) to € 358 per hectare. Every hectare that satisfied one non-trade concern would then receive an extra payment of € 262. Map 14 shows how the geographic distribution of direct payments from the first pillar of the CAP would then change per postal code area (compared to the situation under the historic entitlement model), expressed in amount per hectare of agricultural land. Payments would decrease in areas where few or no farms satisfy the conditions related to non-trade concerns. Areas with a relatively large number of farms that satisfy these non-trade concerns are easily recognisable on the maps.



Map 14. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of the CAP per postal code area under the flat rate model with 20% modulation and redirection (compared to the situation under the historic entitlement model)*



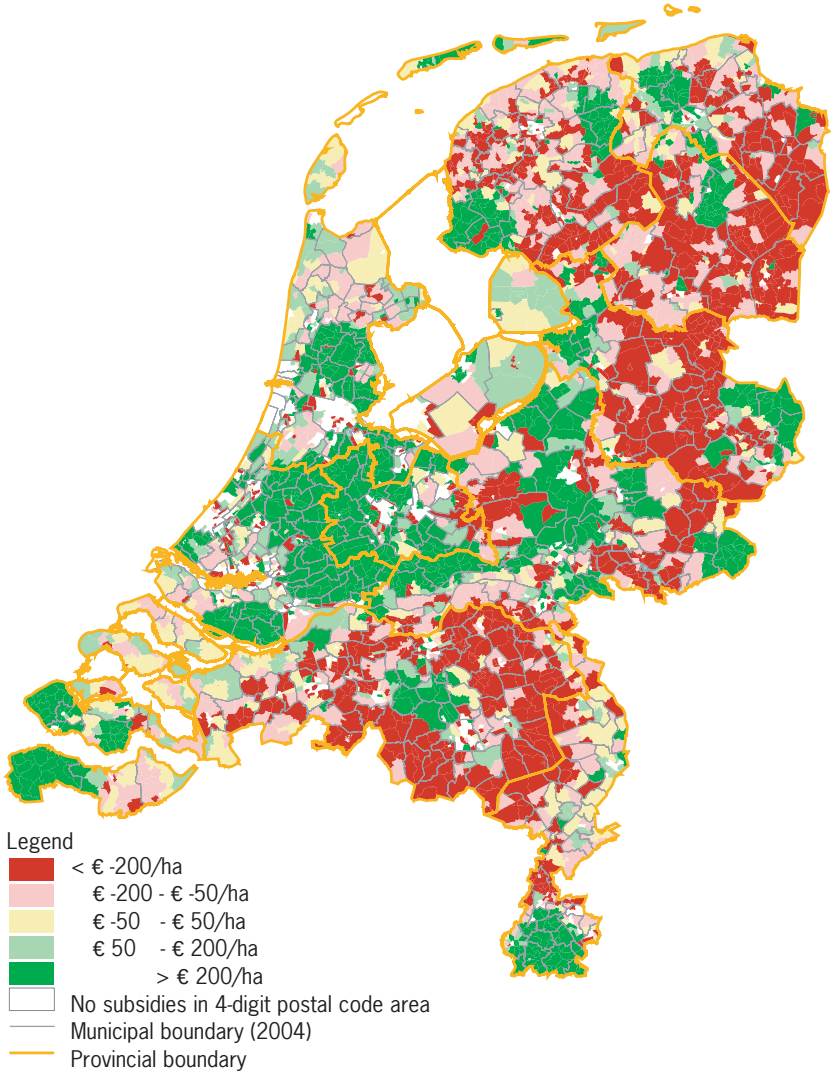
Map 15. *Changes that would occur in direct payments (□/recipient) from the first pillar of the CAP per postal code area under the flat rate model with 20% modulation and redirection (compared to the situation under the historic entitlement model)*

The same picture arises if the changes are expressed in terms of payment per potential recipient (see Map 15). The northern, eastern and south-eastern parts of the country would lose money to the central and western parts of the country.

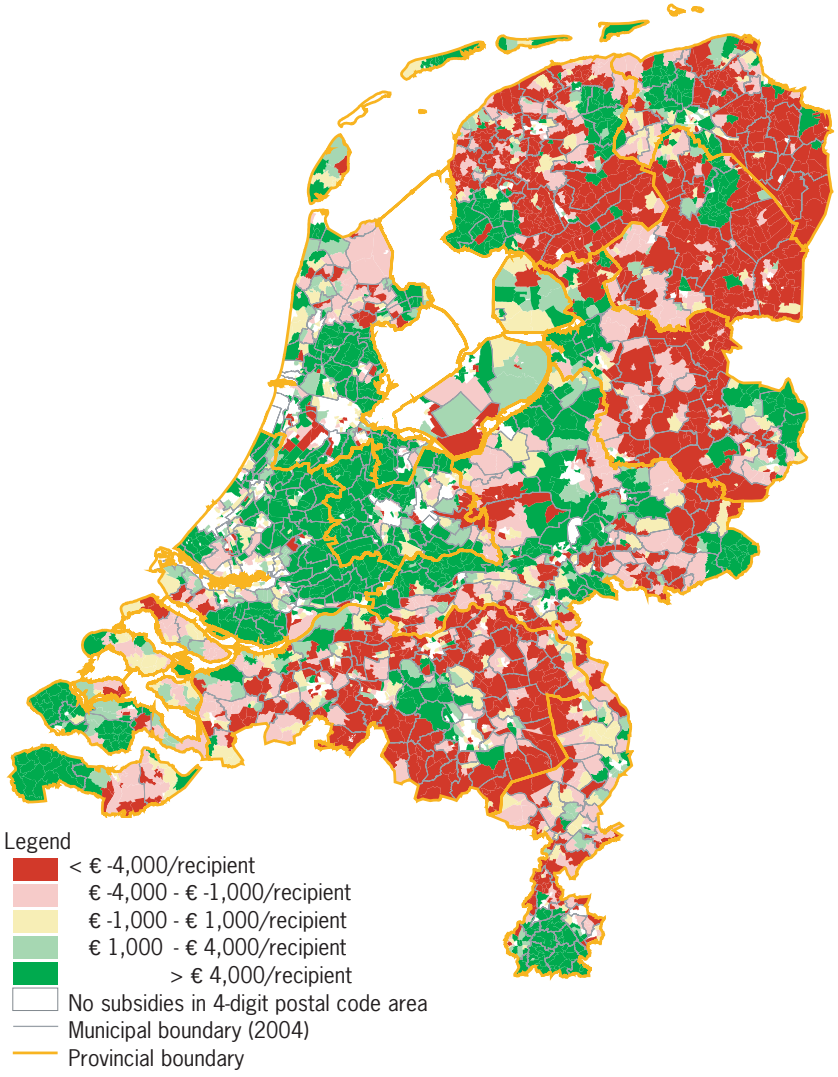
4.6.2 Fifty per cent of the budget available for non-trade concerns

In this variation, the flat rate amount of € 448 per hectare would be reduced by 50% to € 224 per hectare. Every hectare that satisfied one non-trade concern would then receive an extra payment of € 656. Map 16 shows how the geographic distribution of direct payments (expressed in amount per hectare of agricultural land) from the first pillar of the CAP would change if the flat rate model with 50% modulation and redirection was implemented as opposed to the historic entitlement model. Areas where few or no farms satisfy the non-trade concerns would be seriously affected. We see even more clearly than in Map 7 how areas with many farms that satisfy non-trade concerns would benefit.

The same picture arises if the changes are expressed in terms of payment per potential recipient (see Map 17).



Map 16. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of the CAP per postal code area under the flat rate model with 50% modulation and redirection (compared to the situation under the historic entitlement model)*

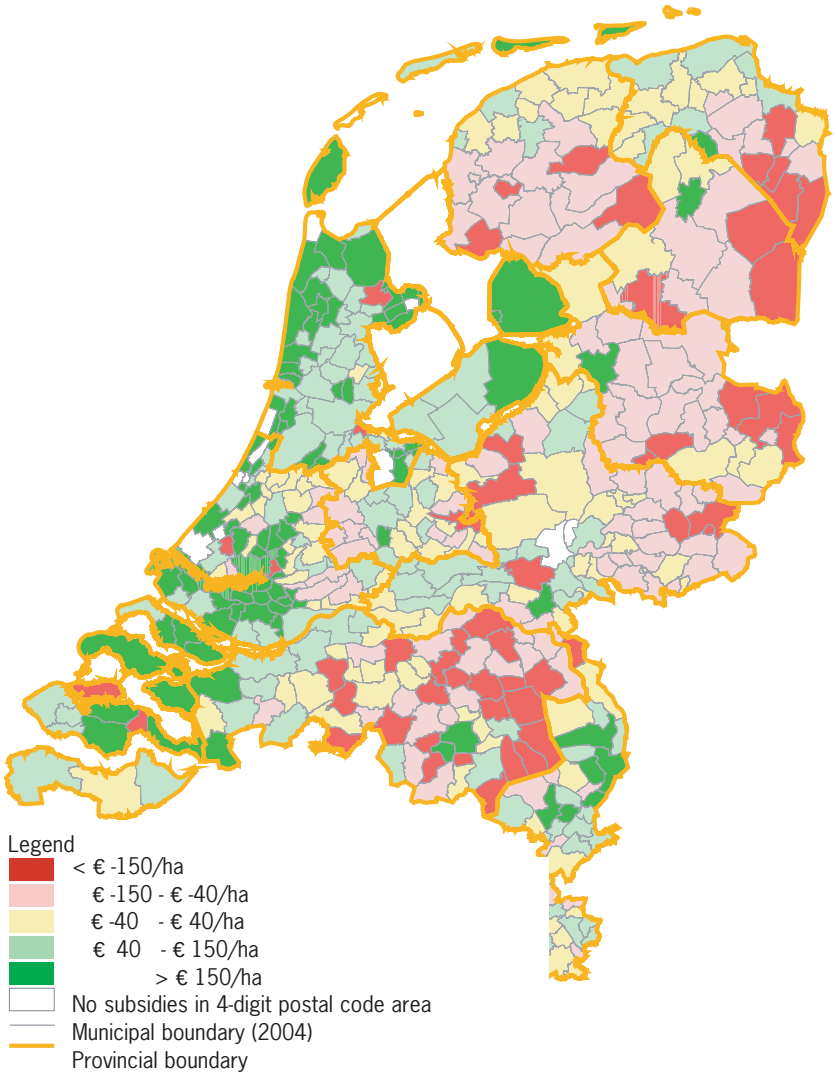


Map 17. *Changes that would occur in direct payments (□/recipient) from the first pillar of the CAP per postal code area under the flat rate model with 50% modulation and redirection (compared to the situation under the historic entitlement model)*

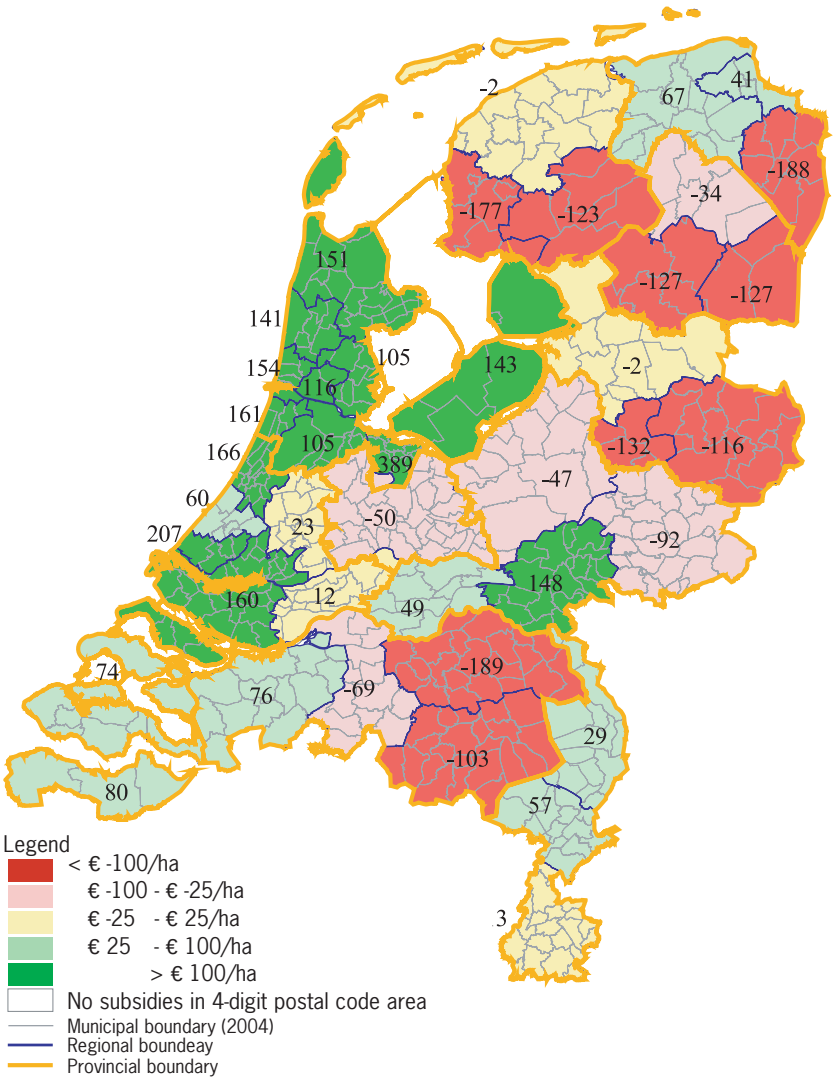
4.7 Choice of spatial scale

The previous images presented the changes in payments per hectare or per recipient aggregated to the scale of postal code areas. Maps 18, 19 and 20 present the changes that would be brought about by the flat rate model (as opposed to the situation under the historic entitlement model) aggregated to the level of county, COROP region and province. Compared to Map 12, which presents the changes per postal code area, we can see that the images become less revealing as the scale increases. The local details become lost in the averages, which decreases the differences between the chosen spatial units. An amount of about € 150 million is redistributed at the level of postal code areas, and this amount decreases to € 133 million at the county level, € 99 million at the level of COROP regions and about € 70 million at the provincial level.

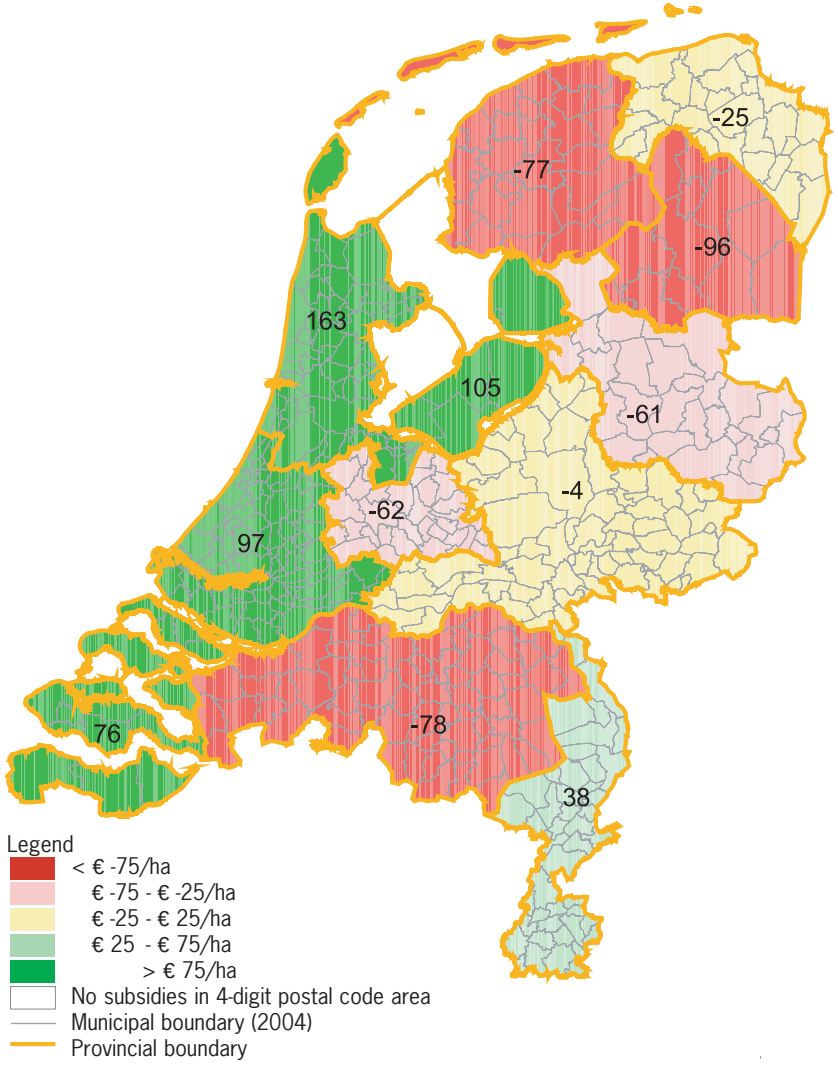
The COROP regions that could lose the most under the flat rate model are the south-western part of Friesland (€ -177/ha), the eastern part of Groningen (€ -188/ha) and the north-eastern part of North Brabant (€ -189/ha). Other COROP regions in the north and in Overijssel would also face a sharp decrease in payments per hectare. The most benefit from implementation of the flat rate model would go to COROP regions in the urbanised western part of the country and Flevoland, where agricultural production is largely unsubsidised because it consists mostly of horticultural and other unregulated crops.



Map 18. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of CAP subsidies per county under the flat rate model (compared to the situation under the historic entitlement model)*



Map 19. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of CAP subsidies per COROP region under the flat rate model (compared to the situation under the historic entitlement model)*



Map 20. *Changes that would occur in direct payments (□/ha of agricultural land) from the first pillar of CAP subsidies per province under the flat rate model (compared to the situation under the historic entitlement model)*

5 Conclusions

Since the most recent CAP reforms went into effect on 1 January 2006, farm subsidies in the Netherlands have been granted on the basis of entitlements claimed by farmers in the reference period 2000-2002. There are, however, other ways to calculate the farm payments and these could replace the current scheme in the future. This study identified how variations on the current payment scheme would lead to shifts in the geographic and sectoral distribution of subsidies.

Geographic distribution of CAP payments is related to type of production

The CAP has been structured in such a way that relatively few or no subsidies at all are granted for some products, while a relatively large number are granted for other products in the form of payments, premiums, etc. The geographic distribution of subsidies from the CAP budget based on the 2004 situation (Map 2, in euros per hectare of agricultural land) clearly shows how the CAP funds were spent: areas dominated by the production of starch potatoes (Veenkoloniën), sugar beets (Veenkoloniën), milk (Friesland, North Brabant and Overijssel) and veal (Gelderse Vallei) receive a relatively large number of subsidies, whereas areas dominated by the cultivation of table potatoes, onions, vegetables, fruit, bulbs and flowers receive relatively few subsidies. The farms that received the highest subsidies in 2004 (Map 3, in euros per recipient) were concentrated in the three northern provinces and Flevoland. In the Veenkoloniën (in the eastern areas of Groningen and the province of Drenthe) recipients were mostly farms that grow root crops (starch potatoes, sugar beets), whereas in Friesland they were mostly farms with grazing livestock that receive a milk premium in addition to a slaughter and beef premium. In Flevoland the recipients were mostly large farms with arable crops and grazing livestock. The recipients in all areas are generally relatively large farms.

Geographic distribution of CAP payments is related to allocation method

Historic entitlement model
The historic entitlement model is based on the expected implementation in 2006 of a single farm payment scheme, involving an expected 40% reduction in subsidies for the dairy, sugar and starch potato sectors. As a result of recent reforms, the payments to be distributed amount to € 916 million, which is 25% less than the total amount of subsidies granted in 2004. Areas where production of these crops is important receive less according to the historic entitlement model than they did in 2004. From the geographic standpoint, the largest recipients are still concentrated in the north and Flevoland, although the amount they receive is less than in 2004 (Map 5).

Variations on historic entitlement model: modulation and redirection
In calculating the modulation of subsidies we assumed generic cuts of 20% and 50% and capped payments at € 40,000 per farm. The extra budgets made available in this way (€ 183 million, € 458 million and € 115 million respectively) would subsequently be redirected to farmers for satisfying conditions related to non-trade concerns in their business operations. The following non-trade concerns were considered in this study: location in National Landscape areas (465,000 ha); location in protected areas (180,000 ha) and application of organic farming

methods (52,000 ha). Together these represent 698,000 ha. When modulation/capping is applied in the three allocation variations, € 262 (20% modulation), € 656 (50% modulation) and € 164 (capping) per hectare become available. Since the National Landscapes are by far the most important category, we see that, with the variation in which historic entitlement is combined with modulation and redirection, it is primarily the recipients in the National Landscapes who would receive higher payments. If such a generic reduction is applied, the rest of the Netherlands would thus pay the price. If payments are capped at € 40,000 per farm, the Veenkoloniën and Flevoland would be the hardest hit (maps 6 to 11).

Flat rate model

The flat rate model would allocate € 448 to every hectare of agricultural land in the Netherlands. Areas with many unregulated crops and horticultural products, which receive few or no payments under the historic entitlement model, would see an increase in payments, whereas areas receiving a relatively high payment per hectare under the historic entitlement model would experience the opposite. Generally speaking, the flat rate model would benefit areas in North and South Holland, Zeeland, Flevoland and the northern areas of Friesland, Groningen and Limburg, and negatively impact the rest of the country, namely the Veenkoloniën, North Brabant, the Gelderse Vallei, Overijssel and Gelderland. If an historic entitlement or flat rate model is coupled with modulation and redirection based on satisfaction of conditions related to non-trade concerns, the farms receiving higher payments would be primarily in areas designated as National Landscapes (Maps 12 to 17).

Sectoral shift largest in grazing livestock sector

The 'hottest' sector under the historic entitlement model is the grazing livestock sector (almost € 600 million in subsidies). This is followed by the crop sector (almost € 170 million) and the mixed farms sector (€ 80 million). The granivore sector (€ 12 million) and the horticulture and permanent crop sector (€ 8 million) receive the least aid. This hierarchy would not change under the flat rate model, although the grazing livestock sector would on the whole receive less (by € 68 million) and the other sectors somewhat more.

Redistribution is a political choice

The current geographic distribution of CAP subsidies is uneven. By manipulating variations on the farm payment models, we can effect a different geographic and/or sectoral distribution. Our study showed that based on the 2004 figures the areas with the highest subsidies per hectare and per recipient are located in the north. Redistribution of subsidies would therefore be especially detrimental for these areas, unless it involves a variation that would allow them to recover some of the reduced funds by satisfying certain requirements or by supplying designated public services. The variations reviewed in this study, however, provided virtually no such opportunities.

The desirability of geographic redistribution of the subsidies - through implementation of a different allocation scheme - is desirable or not depends on political choices. Our study shows that there are plenty of

ways to favour specific sectors, regions and/or non-trade concerns. Reducing payments and redirecting them to the National Landscapes, for example, makes it possible to increase receipts in these areas substantially. A non-trade concern that we have not yet considered is northern location. With this variation in place, part of the subsidies skimmed in the north could be funnelled back there again.

The allocation of single farm payments can take many forms. This study only looked at a few of them. More complex schemes with many variations between areas and/or sectors would also involve more complex administration.

Redistributing subsidies over the various areas and regions through implementation of any of the different variations would in itself say little about the continuity of agriculture in these specific areas. To draw any conclusions about whether redistribution would threaten the viability of agriculture in certain regions, the change in farm subsidies would have to be related to the level of farm income. To gain more insight into the longer-term effects of specific allocation variations, it would be advisable to analyse the relationship between the changes in the payments and the level of farm income. Bont et al. (2006) have made a start in this direction.

6 Recommendations

To increase the usefulness of the study results for the ministry's various policy areas, we present below additional aspects that should be considered in the weighing of possible allocation options.

A more informed choice of allocation scheme could be made by:

- including other European funds, such as structural funds (approximately € 450 million per year from the European Fund for Regional Development, the European Social Fund and the Financing Instrument for Fisheries Guidance), and rural development financing (about € 62 million per year) in the geographic mapping of subsidies;
- including national monies, such as annual co-financing of the second phase of the EU rural development programme (about € 200 million) and the national investment budget for rural areas (more than € 400 million per year), in the geographic mapping of subsidies.

These programmes provide investment support for people, businesses and projects and are thus very different from the direct payments granted within the framework of the first pillar. The national government's investment budget for rural areas also reaches beyond agriculture, so payments from this fund cannot simply be linked to hectares of agricultural land. Moreover, it is not always possible to attribute these funds directly to postal code areas. However, in our study we also had to shift our focus from the direct recipients of dairy, starch and sugar subsidies to the actual beneficiaries. It should thus also be possible to identify how the above-mentioned funds trickle down or are transferred to others.

The effects that subsidy shifts could have on the continuity of production or processing industries in the diverse sectors cannot be determined directly from the data. The effects could be enormous, especially in sectors that were recently reformed or are currently undergoing reforms, and for which subsidies will subsequently be paid directly to the primary producers (sugar, milk and dairy, and starch). The effects could also be enormous for a number of land management agencies that now receive large sums. It would be advisable for them to think through the consequences for the management of their lands and look for alternatives.

The non-trade concerns chosen for this study are not the only possibilities. The calculations could be made again after identifying other non-trade concerns of general societal importance that the government currently does not support or subsidise. Finally, as soon as the data becomes available, the calculations could be repeated based on the support actually paid in the years subsequent to 2004.

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http://www.prodzuivel.nl/pz/statistiek/binnenland/superheffing/gebied
Contains the data on the milk quota per province for 1999/2000 to 2004/2005.

http://europa.eu.int/comm/agriculture/markets/index_eng.htm
This website has information on general aspects of EU agricultural markets and specific regulations on plants and animals.

Appendix 1 Overview of EU regulations and corresponding funds (in □) from 2000 to 2004

	EU regulations (pillar 1 in white)	**2000**	**2001**	**2002**	**2003**	**2004**
80	Promotional activities in third countries	€ -	€ -	€ 10,620	€ -	€ -
81	Arable crops	€ 182,262,024	€ 128,434,072	€ 89,749,792	€ 84,024,840	€ -
82	Other sectors or vegetable products	€ 10,529,912	€ 10,458,361	€ 9,417,494	€ 11,017,140	€ -
83	Forestry	€ -	€ 1,146,715	€ 40,862	€ -	€ -
84	DEMO	€ 3,859,530	€ 4,414,436	€ 4,443,724	€ 1,808,341	€ 306,879
85	DEMODL	€ -	€ -	€ -	€ -	€ 90,044
86	Evaluations (U99)	€	€ -	€ -	€ 126,120	€ 73,094
87	Extensification of beef bull breeding	€ 962	€ 1,124	€ 86	€ -	€ -
88	Dried feed crops and seeded legumes	€ 20,900,770	€ 27,414,571	€ 23,971,847	€ 25,538,943	€ -
89	Vegetables and fruit	€ 38,037,523	€ 39,582,241	€ 30,121,586	€ 47,374,768	€ 58,316,186
90	State land procurement (K-36)	€ -	€ 33,601,818	€ 4,848,688	€ 12,273,520	€ 6,431,653
91	H38c	€ -	€ 15,083	€ -	€ -	€ -
92	H38c1a	€ -	€ 43,956	€ 25,964	€ 99,598	€ -
93	Pigmeat interventions	€ 8,887,882	€ 3,612,421	€ -	€ -	€ -
94	Fishery product interventions	€ 58,717	€ 19,096	€ 15,272	€ 382,350	€ 432,916
95	Investment regulation M&C, VAL/VAB	€ -	€ -	€ 5,558,961	€ 115,078	€ -
96	K9	€ -	€ 44,940	€ -	€ -	€ -
97	Land use planning - recreational areas (S-38f)	€ -	€ 474,606	€ 310,507	€ 449,407	€ 282,898
98	Land use planning - reserves and nature development areas (T-38c2)	€ -	€ 686,407	€ 698,758	€ 1,084,065	€ 818,707
99	Land use planning - acquired lots (K-38d)	€ -	€ 1,298,080	€ 6 60,059	€ 942,181	€ 253,199
100	Land use planning - environmental measures (T-38-g)	€ -	€ 81,364	€ 22,250	€ 59,793	€ 59,377
101	Land use planning- transportation infrastructure (R-38a)	€ -	€ 487,918	€ 1,080,491	€ 462,926	€ 879,915
102	Land use planning - water management (Q-38b)	€ -	€ 2,261,737	€ 1,726,801	€ 3,619,176	€ 3,428,560
103	Market measures for grains	€ -	€ -	€ -	€ -	€ 99,516,352

	EU regulations	2000	2001	2002	2003	2004
104	Milk and dairy products	€ -	€ -	€ -	€ -	€ 652,661,593
105	Milk and dairy products	€ 704,997,429	€ 444,489,597	€ 465,520,242	€ 645,586,666	€ -
106	Modernisation guideline	€ -	€ -	€ -	€ 578,520	€ 444,630
107	Public storage of butter	€ -	€ -	€ 71,351,550	€ (1,38)	€ (37,792,555)
108	Public storage of skimmed milk powder	€ (9,450,737)	€ -	€ 14,436,598	€ 1,200,575	€ (14,125,355)
109	Public storage of beef	€ (432,807)	€ -	€ 143,181	€ (252,156)	€ -
110	Purchase regulation for calves (in response to hoof and mouth disease)	€ -	€ 5,822,914	€ -	€ -	€ -
111	Purchase regulation for cows (in response to mad cow disease)	€ -	€ 19,751	€ -	€ -	€ -
112	Purchase regulation for sows (in response to hoof and mouth disease)	€ -	€ 182,860	€ 108,762	€ -	€ -
113	Area support for protein crops	€ 604,695	€ 457,421	€ 648,365	€ 795,076	€ 1,311,015
114	Area support for grains	€ 56,039,837	€ 70,160,687	€ 74,594,639	€ 79,021,483	€ 75,898,381
115	Area support for linseed	€ 54,820	€ 24,436	€ 2,649,333	€ 2,448,453	€ 2,325,044
116	Area support for maize	€ 64,980,218	€ 79,812,517	€ 88,763,629	€ 81,317,809	€ 79,992,917
117	Area support for oil seeds	€ 423,302	€ 381,573	€ 282,672	€ 144,623	€ 314,759
118	Other vegetable products/other measures	€ -	€ -	€ -	€ -	€ 37,707,694
119	Private storage of butter/cream	€ 6,807,632	€ 7,108,301	€ 8,550,019	€ 7,784,716	€ 6,175,849
120	Private storage of cows	€ -	€ 220,500	€ 1,947,254	€ -	€ -
121	Private storage of pigmeat	€ 15,010,599	€ 447,145	€ -	€ 4,592,416	€ 3,255,716
122	Provincial programme letter C -courses (C-17)	€ -	€ 106,764	€ 122,692	€ 386,777	€ 342,914
123	Provincial programme letter I - other forestry measures (I-80)	€ -	€ -	€ -	€ 54,327	€ 59,094
124	Provincial programme letter K - reparcelling (K-09)	€ -	€ 64,913	€ -	€ 214,099	€ 132,624
125	Provincial programme letter M - sale of quality agricultural products (M-10)	€ -	€ 122,145	€ 81,356	€ 22,439	€ 34,937
126	Provincial programme letter N - basic care service authorities (N-11)	€ -	€ 1,469,145	€ 518,345	€ 1,927,142	€ 852,841
127	Provincial programme letter O - village renewal, rural heritage (O-37)	€ -	€ 1,981,210	€ 3,561,247	€ 4,768,460	€ 6,051,304
128	Provincial programme letter P - diversification of agricultural activities (P-12)	€ -	€ 45,195	€ 32,464	€ (27,04)	€ 222,239

	EU regulations	2000	2001	2002	2003	2004
129	Provincial programme letter Q - water management in agriculture (Q-13)	€ -	€ 5,353,413	€ 4,697,592	€ 5,102,537	€ 9,208,626
130	Provincial programme letter R - development and improvement of agricultural infrastructure (R-14)	€ -	€ 412,864	€ 1,312,008	€ 337,463	€ 629,372
131	Provincial programme letter S - promotion of traditional activities for tourism (S-15)	€ -	€ 1,203,528	€ 1,590,127	€ 2,544,275	€ 3,338,380
						€ 13,243,399
132	Provincial programme letter T - environmental protection, agriculture, forestry and landscape management (T-16)	€ -	€ 15,602,060	€ 5,917,671	€ 9,239,154	
133	Premium for male cattle	€ 10,329,215	€ 14,399,441	€ 19,232,158	€ 24,801,950	€ 27,562,187
134	Ewe premium	€ 15,645,887	€ 12,381,592	€ 6,207,253	€ 13,620,985	€ 14,040,188
135	Suckling cow premium	€ 10,099,165	€ 9,734,683	€ 10,131,077	€ 11,262,403	€ 10,625,049
136	Food aid programmes	€ 3,527,484	€ 1,967,189	€ 1,767,903	€ 3,051,186	€ -
137	Promotional and informational activities	€ 4,580,826	€ 3,751,494	€ 163,968	€ -	€ -
138	Promotional activities within the EU	€ -	€ -	€ -	€ -	€ 306,498
139	Promotional activities in third countries	€ -	€ -	€ -	€ -	€ 16,556
140	Promotional activities within the EU	€ -	€ -	€ -	€ 1,402,169	€ -
141	Promotional activities in third countries	€ -	€ -	€ -	€ 46,871	€ -
142	Provincial programme a	€ -	€ 21,354	€ 37,172	€ 129,710	€ 27,199
143	Provincial programme c	€ -	€ 261,848	€ 136,069	€ 372,767	€ 701,540
144	Provincial programme g	€ -	€ 1,093	€ 42,135	€ 60,783	€ 35,219
145	Provincial programme m	€ -	€ 23,710	€ 110,016	€ 394,420	€ 534,177
146	Provincial programme n	€ -	€ -	€ -	€ -	€ 9,518
147	Provincial programme p	€ -	€ 4,416	€ 67,488	€ 63,453	€ 209,832
148	Provincial programme s	€ -	€ -	€ -	€ 27,361	€ 51,441
149	Provincial programme t	€ -	€ -	€ 46,152	€ 182,541	€ 254,464
150	Q35	€ -	€ 411,399	€ 198,933	€ 164,314	€ -
151	RBON	€ 5,619,1	€ 4,034,864	€ 3,530,939	€ 2,171,476	€ 720,156

	EU regulations	2000	2001	2002	2003	2004
152	Regional private environmental protection org. (K-26)	€ -	€ 12,015,366	€ 2,482,145	€ 9,236,199	€ 5,140,209
153	Regulation for farm relocation and closure (K-36b)					
154	Restitutions for certain goods, acquired through the	€ -	€ 1,300,564	€ 2,129,959	€ 2,387,038	€ 1,485,488
	processing of agricultural products	€ 150,234,994	€ 119,043,839	€ 117,166,415	€ 118,596,356	
155	Rice				€ -	€ -
156	RSBP	€ -	€ -	€ -		€ 9
157	RSG	€ 761,064	€ 796,144	€ 1,886,920	€ 1,645,377	€ 1,851,996
158	Beef	€ -	€ 573,132	€ 677,255	€ 633,157	€ 623,765
159	Agricultural nature conservation	€ 60,021,159	€ 33,950,732	€ 21,104,261	€ 34,916,469	€ 41,156,496
160	Agricultural nature conservation + permanent nature	€ -	€ 3,496,925	€ 2,095,420	€ 3,598,685	€ 5,336,282
	conservation (forestation of agricultural land)	€ -	€ 121,834	€ 184,197	€ 209,985	€ 269,725
161	SBL	€ 987,204	€ 786,783	€ 727,430	€ 737,624	€ 833,364
162	Set-aside land	€ 1,290,801	€ 393,601	€ 370,423	€ 395,560	€ 383,329
163	Slaughter premium	€ -	€ 2 8,116,667	€ 76,120,798	€ 100,226,595	€ 89,454,339
164	Permanent nature conservation	€ -	€ 51,181	€ 96,435	€ 582,243	€ 407,100
165	Support for beekeeping (honey regulation)	€ 278,941	€ 135,081	€ 140,102	€ 155,684	€ 157,200
166	Support for not-for-profit purchasing of butter by	€ 248,726	€ 75,877	€ 125,350	€ 191,132	€ 100,095
	institutions and communities					
167	Support for butter and butter concentrate for bakery	€ 57,708,122	€ 53,218,592	€ 54,207,927	€ 49,699,786	€ 47,793,792
	products	€ 491,592	€ 550,343	€ 765,571	€ 622,602	€ 316,904
168	Support for butter concentrate from the market	€ 1,075,975	€ (3,857)	€ -	€ -	€ -
169	STOAS					
170	Subsidy regulation for regional policy - diversification	€	€ -	€ -	€ 77,337	€ 819,935
	(P-35-2p)	-				
171	Subsidy regulation for regional policy - water	€ -	€ -	€ -	€ 419,074	€ 1,284,917
	management (Q-35-2q)					
172	Sugar	€ 98,403,838	€ 83,577,968	€ 74,612,284	€ 51,300,918	€ -
173	Sugar and monetary measures	€ -	€ -	€ -	€ -	€ 103,794,565

	EU regulations	2000	2001	2002	2003	2004
174	SZL	€ 32,470	€ 43,480	€ 49,033	€ 103,120	€ 63,861
175	Pigmeat, eggs and slaughter poultry	€ 30,192,808	€ 11,514,253	€ 5,074,439	€ 5,546,675	€ -
176	Pigmeat, eggs, poultry and other animal products	€ -	€ -	€ -	€ -	€ 8,993,363
177	Mandatory fallow	€ 7,995,350	€ 6,083,374	€ 7,425,851	€ 8,215,078	€ 8,378,987
178	Fibre crops	€ -	€ -	€ -	€ -	€ 2,382,710
179	Fibre crops and silkworms	€ 5,946,657	€ 6,270,198	€ 704,984	€ 1,559,330	€ -
180	Food programmes	€ -	€ -	€ -	€ -	€ 165,861
181	Voluntary fallow	€ -	€ -	€ 1,934,951	€ 2,112,010	€ 1,010,410
	Total pillar 1	**€ 1,556,708,340**	**€ 1,203,814,513**	**€ 1,279,538,653**	**€ 1,418,700,082**	**€ 1,322,629,049**
	Total pillar 2	**€ 12,335,390**	**€ 94,858,534**	**€ 51,748,262**	**€ 69,385,025**	**€ 67,844,874**
	Totals	**€ 1,569,043,729**	**€ 1,298,673,048**	**€ 1,331,286,915**	**€ 1,488,085,107**	**€ 1,390,473,924**

Source: LNV-database.

Appendix 2 Percentages of farm types per COROP areas

CO-ROP NR	Farm types[1] COROPNM	Arable crops ov_ak	131	141	142	144	145	Horticulture/ permanent cultivation	Grazing livestock 411	438	444	445	ov_gd	Granivores	Not known	Combinations	Total
1	Eastern Groningen	1	10	28	8	6	6	2	15	0	1	4	2	1	5	11	1122
2	Delfzijl and surrounding area	0	9	7	6	5	3	1	35	0	3	10	5	1	10	6	407
3	Rest of Groningen	0	3	9	4	4	2	1	37	1	4	15	5	1	11	5	2418
4	Northern Friesland	0	1	6	1	2	1	1	45	0	5	18	6	1	10	3	3230
5	South-western Friesland	0	0	1	0	1	1	0	67	1	5	12	4	0	7	1	1398
6	South-eastern Friesland	0	0	0	0	0	1	0	60	1	4	16	4	1	10	2	2247
7	Northern Drenthe	0	1	14	4	4	3	2	28	1	4	14	5	1	10	9	1313
8	South-eastern Drenthe	1	2	26	5	8	3	1	20	0	1	7	4	1	9	11	1227
9	South-western Drenthe	0	1	4	1	2	4	1	40	1	4	16	6	2	13	6	1977
10	Northern Overijssel	0	1	2	0	1	2	1	47	2	4	14	7	3	10	6	4292
11	South-western Overijssel	0	1	0	0	1	5	1	41	1	3	15	9	6	8	9	1172
12	Twente	0	1	0	0	0	5	1	38	2	2	15	10	6	8	12	4559
13	Veluwe	0	1	0	0	0	5	0	24	10	4	17	10	6	12	10	4344
14	Achterhoek	0	2	1	1	1	6	1	39	1	2	14	8	6	7	13	6017
15	Arnhem/Nijmegen	0	4	1	2	2	5	3	24	1	3	18	8	5	12	13	1872
16	South-western Gelderland	0	2	0	1	1	4	6	28	1	4	21	11	2	8	11	1704
17	Utrecht	0	0	0	0	0	2	1	46	3	4	15	9	4	8	8	3568
18	Northern North Holland	1	1	9	1	7	3	9	29	0	4	14	5	0	7	11	1857
19	Alkmaar and surrounding area	0	1	3	1	3	2	6	37	0	6	20	6	0	11	7	579
20	Ijmond	0	1	1	0	1	3	1	39	0	7	25	6	0	13	3	118
21	Haarlem area	2	0	0	4	0	0	0	30	0	9	33	7	0	13	2	46
22	Zaanstreek	0	0	0	1	1	2	1	40	0	12	22	5	1	12	2	221
23	Amsterdam area	0	1	4	4	6	2	3	32	0	9	22	6	0	9	3	1117
24	Het Gooi en Vecht	0	0	0	0	0	2	0	40	0	10	31	6	0	9	2	315
25	Agglomeratie Leid	0	0	0	0	0	0	2	56	0	7	20	6	0	5	2	275

CO-ROP NR	Farm types[1] COROPNM	Arable crops ov_ak	131	141	142	144	145	Horticulture/ Permanent cultivation	Grazing livestock 411	438	444	445	ov_gd	Granivores	Not known	Combinations	Total
26	Den Haag area	0	1	1	0	0	2	1	43	0	8	24	9	0	9	3	158
27	Delft and Westland	0	1	0	0	1	2	4	47	0	5	18	4	0	16	2	230
28	Eastern South Holland	0	1	2	1	2	1	1	49	0	6	15	6	1	10	5	1331
29	Groot-Rijnmond	1	4	7	7	17	4	6	14	0	3	11	4	0	7	13	1609
30	South-eastern South Holland	0	1	0	1	2	1	2	57	1	4	15	5	1	7	4	1280
31	Zeeuwsch-Vlaanderen	1	6	6	11	25	20	2	5	0	1	3	3	0	4	11	1420
32	Rest of Zeeland	1	6	5	9	26	12	5	6	0	1	5	3	1	5	16	2030
33	West North Brabant	1	3	4	2	11	11	7	20	0	1	9	8	3	4	14	2515
34	Central North Brabant	1	1	2	1	5	9	3	30	3	2	10	9	8	5	13	2096
35	North-eastern North Brabant	0	3	1	1	2	9	3	23	2	1	9	9	14	7	14	4852
36	South-eastern North Brabant	0	4	1	1	2	10	4	25	2	1	7	8	16	5	14	3714
37	Central Limburg	1	4	3	3	4	7	14	14	1	1	6	5	14	4	19	1896
38	North Limburg	0	4	3	5	5	9	8	11	1	1	8	7	11	5	24	1448
39	Southern LImburg	0	4	4	10	8	7	3	17	0	2	12	6	2	10	16	1359
40	Flevoland	1	1	14	1	41	4	4	15	0	0	2	2	0	2	14	2034
	Grand Total	**0**	**2**	**4**	**2**	**5**	**5**	**3**	**32**	**2**	**3**	**13**	**7**	**5**	**8**	**10**	**75367**

[1] Notes on farm types:
Arable crops
131: Crops that can be harvested with a combine harvester
141: Specialised root crop farms
142: Grain/root crop farms
144: Other root crop farms
145: Other arable crop farms
Remaining arable crops: various types represented by only a small number of farms
Arable vegetable crop farms

Grazing livestock farms
411: Specialised dairy cattle farms
438: Calf feedlots
444: Pasture land farm
445: Grazing livestock farms not mentioned elsewhere
Remaining grazing livestock: various types represented by only a small number of farms
Specialised dairy cattle farms, other dairy cattle farms, other cattle farms
Sheep farms, mixed cattle/sheep farms, goat farms

Appendix 3 Milk production per cow per province and calculation method EU premium per cow

Province	Number of dairy cows	Milk quota 2003/04 (in thousands of litres)	Kg milk per cow	EU premium / per kg milk	EU-` premium per cow
	(1)	(2)	(3)	(4)	(5)
Drenthe	89993	680186	7,558.21	€ 0.06	€ 453
Flevoland	27614	236748	8,573.48	€ 0.06	€ 514
Friesland	260474	1955074	7,505.83	€ 0.06	€ 450
Gelderland	227918	1726409	7,574.69	€ 0.06	€ 454
Groningen	85219	641480	7,527.43	€ 0.06	€ 452
Limburg	48054	359480	7,480.75	€ 0.06	€ 449
North Brabant	212887	1630631	7,659.61	€ 0.06	€ 460
North Holland	79056	576248	7,289.11	€ 0.06	€ 437
Overijssel	234935	1796184	7,645.45	€ 0.06	€ 459
Utrecht	82356	631769	7,671.20	€ 0.06	€ 460
Zeeland	15287	123356	8,069.34	€ 0.06	€ 484
South Holland	91309	706942	7,742.30	€ 0.06	€ 465
Not known	519	864	1,664.74	€ 0.06	€ 100
Total	**1455621**	**11065372**	**7,601.82**	**€ 0.06**	**€ 456**

Notes on columns:

Number of cows (1):	from GIAB 2004
Milk quota (2):	Commodity Board for Dairy Products
Kg milk per cow (3):	column (2)/column (1)
EU premium per kg milk (4):	assumption. A value € 0.0036 per kg was also used in the calculations.
EU premium per cow (5):	column (4) multiplied by column (3)