

DISCUSSION PAPER

Leibniz Institute of Agricultural Development in Central and Eastern Europe

**IMPACT OF THE INTRODUCTION OF DECOUPLED PAYMENTS
ON FUNCTIONING OF THE GERMAN LAND MARKET.
COUNTRY REPORT OF THE EU TENDER: "STUDY ON THE
FUNCTIONING OF LAND MARKETS IN THOSE EU MEMBER
STATES INFLUENCED BY MEASURES APPLIED UNDER THE
COMMON AGRICULTURAL POLICY"**

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ABSTRACT

Against the background of the reform of the Common Agricultural Policy (CAP) in 2003 the following analysis, brings into focus the responses of the agricultural sector to decoupled subsidies. In particular it addresses the impact of the Single Payment Scheme (SPS) on land sales and rent prices and therefore on farm structure. It also aims to assess the extent to which the reform advances sound and sustainable agriculture and provides incentives for market-orientated farming practices. The study is based on the analysis of statistical data and expert surveys conducted in three selected regions.

JEL: Q15, Q18

Keywords: Land markets, midterm review, CAP, structural change.

ZUSAMMENFASSUNG

AUSWIRKUNG DER ENTKOPPLUNG VON DIREKTZAHLUNGEN AUF DEN BODENMARKT IN DEUTSCHLAND
LÄNDERBERICHT DES EU TENDERS: "STUDIE DER FUNKTIONSWEISE DER BODENMÄRKTE IN VON
DEN MAßNAHMEN DER GEMEINSAMEN AGRARPOLITIK BETROFFENEN EU-MITGLIEDSSTAATEN"

Die vorliegende Studie untersucht den Einfluss der 2003 im Zuge der Reform der Gemeinsamen Agrarpolitik (GAP) durchgeführten Entkopplung der Direktzahlungen auf den Agrarsektor in Deutschland. Besonderer Fokus der Analyse liegt auf der Auswirkung der einmaligen Zahlungen auf die Kauf- und Pachtpreise für das landwirtschaftlich genutzte Land. Des Weiteren wird die Förderung einer nachhaltigen und marktorientierten Landwirtschaft durch die GAP-Reform bewertet. Die Untersuchung basiert auf Auswertung statistischer Daten und auf Expertenbefragungen, welche in drei ausgewählten Bundesländern durchgeführt wurden.

JEL: Q15, Q18

Schlüsselwörter: Bodenmärkte, Halbzeitbewertung, GAP, Strukturwandel.

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ABBREVIATIONS

ASE	Agricultural Census
BAYSTMLF	Bayerisches Staatsministerium für Landwirtschaft und Forsten
BMELV	Bundesministerium für Landwirtschaft, Ernährung und Verbraucherschutz
BW	Baden-Württemberg
BY	Bavaria
BE	Berlin
BB	Brandenburg
BVVG	Bodenverwertungs- und -verwaltungs GmbH
CIFAS	Credit Industry Fraud Avoidance System
DNotI	Deutsches Notarinstitut
EALG	Entschädigungs- und Ausgleichsleistungs Gesetz
FAS	Farm Advisory System
GAEC	Good agricultural and ecological conditions
HB	Bremen
HH	Hamburg
HE	Hessen
IACS	Integrated Administration and Control System
InVeKos	Integriertes Verwaltungs- und Kontrollsystem
LU	Livestock units
MVP	Mecklenburg-Western Pomerania
NL-BzAR	Neue Landwirtschaft Briefe zur Agrarreform
NS	Lower Saxony
NRW	North Rhine-Westphalia
OGS	Non permanent fruits, vegetables and starch potatoes
RLP	Rhineland-Palatinate
SL	Saarland
SN	Saxony
SA	Saxony-Anhalt
SFP	Single Farm Payment
SH	Schleswig-Holstein
SMR	Statutory Management Requirements
SMUL	Sächsisches Staatsministerium für Umwelt und Landwirtschaft
SPS	Single Payment Scheme
TH	Thuringia
UAA	Utilized agricultural acreage
ZID	Zentrale InVeKos Datenbank

EXECUTIVE SUMMARY

The study produced the following key findings:

- **Implementation of the SPS**

With regard to the methods of implementing CAP reform, Germany has opted for the full decoupling of income payments by means of a regionalised *dynamic hybrid* model. This model combines two ways of distributing direct payments: (1) according to the historical model and (2) according to the regional model. Further, a *dynamic hybrid* model implies a stepwise transition from the historical decoupling scheme, starting in 2009, to single area payments by the end of 2013.

The political reasoning for this option is that it provides a new direct payment scheme, which:

- Is a comparably simple system;
- Fosters regions with a high share of permanent pasture and extensive land management;
- Is socially maintainable (BMVEL, 2005).

This model is also designed to prevent a high redistribution of payments during the initial stages of reform, thereby encouraging farmers to adjust their production to market demands, as well as to promote more sustainable farming practices. A stepwise transformation to a pure regional model also avoids overstraining the farmers' adaptiveness.

- **Land market developments**

The land sales market has remained relatively stable over the last 5 years. The total amount of land sold at market value annually has remained almost unchanged since 2005. Although land prices have been relatively constant on the aggregate level, in East Germany they increased slightly, while in the western regions they have edged down.

In East Germany, the originally high share of rented land is steadily decreasing. When the economic situation allows, purchasing land is considered a reasonable option to renting land. On the other hand, there is also pressure on farms to buy land, which is caused mostly by (a) the ongoing privatisation of land managed by the state trust holding BVVG (Bodenverwertungs- und -verwaltungs GmbH), and (b) the selling of land by owners or heirs who are not active farmers.

Despite this development, the rental market (over 60 % nationwide and over 80 % in Eastern Germany) continues to play a key role on the German land market. The ongoing discrepancy between rental prices in Western and Eastern Germany are in part due to the differing farm structures. While farms in East Germany face high opportunity costs for the used factors, this is often not the case for family farms in West Germany. Unused labour capacity, high self-financing shares (which ease access to credit capital) and the high stocking densities determine the high rental prices in West Germany.

- **Drivers of land values**

An important determinant of the current land value is the steadily increasing competition for agricultural land areas, which in turn is correlated with increasing worldwide demand for food and energy.

Competition on land markets is especially high in areas with high stocking densities, like in some West German regions. As the stocking densities are very low in Eastern Germany, compliance with the Nitrates Directive is not an issue there. Frequently, intensive animal production is accompanied with the production of bio-energy, e.g. biogas. Accordingly, the impact of advanced bio-energy production on land rental prices was assessed by experts as being strong in West Germany, but very small in East Germany.

Regarding other factors, such as infrastructural expansion and urban pressure (caused by population growth) it is not possible to draw a conclusion on the aggregate level, as these factors are very region-specific. Generally, in regions with a high population density and good economic conditions, the impact on sales prices is higher. This is especially the case for regions in Western Germany.

The impact of the current tax policy, interest rate and inflation were assessed as being both high and unchanged in recent years. This means that the SPS implementation did not intensify their impact on land value. The same conclusion was reached with regard to the impact of market regulation, rural development policies and informal institutions. All respondents stated that the change in the impact of the abovementioned land value drivers in the last 5 years – i.e., since adopting the reform – is not discernible at the moment.

In East Germany, the current dynamics on the sales and rental market are still largely influenced by the active role of the BVVG. For example, on 1st January 2007 BVVG changed the procedures by which they award land. This means that expiring rental contracts cannot be renewed; instead, the land is awarded for sale or with exception, for rental by public announcements. Experts believe this practise raises prices. Moreover, it creates an additional incentive for farms to buy land.

Regarding the effect of the introduction of SPS on land values, the effect is estimated as being low. As there is a shortage of eligible area in relation to premium entitlements, land values should remain constant in relation to the market values for premium entitlements. In line with this argumentation, and due to the introduction of entitlements for natural grassland, an increase of rental prices for grassland could be observed in 2007.

- **Distribution of entitlements and trade**

The average nominal value of entitlements for all regions is €335 in 2007. However, there is a large deviation between farms, ranging from €75 in Saxony-Anhalt to €180 in Rhineland Palatine. Significant differences were observed in regions with pastoral animals due to the impact of farm specific top-ups. Regarding the trade of entitlements, analysis shows that after 1.5 years (July 2007) 7.9 % of all entitlements were sold and 4.9 % were rented. At present, there is a slight excess supply of premium entitlements. Approximately 1 % of entitlements have not been activated. This results in a market value for entitlements which is far below its net present value. Market values of entitlements exceed their face values by 10-80 %. The average market value is estimated at €425 for the period of analysis. Remarkably, no reallocation of set aside entitlements within regions could be observed. This is because of (1) fixed trading regions and (2) the possibility of using set-aside area for non-food production.

- **Effects on structural changes**

The conclusions that can be drawn at the moment are that the implementation of the SPS has no or no significant impact on arable farming, cattle and dairy production, and only a slight negative effect on sheep production. Nevertheless, it is estimated that with the beginning of transformation to the regional model, the SPS will entail stronger negative impacts, especially on cattle and dairy production (assuming that the corresponding farms operate with a low share of natural grassland).

Regarding the distributional effects of SPS, only in regions with extensively used natural grassland do farmers benefit from decoupled payments. Conversely, decoupled payments are rather disadvantageous for regions with intensive dairy or cattle production with a low share of natural grassland.

As payments are still linked to land, it seems that the capitalisation of payments into land rents did not decrease due to the reform, and as a consequence entry/exit barriers are still high. Regarding organisational forms, since 2005 a significant increase in the number of part-time farms was observed. It is likely that small businesses or hobby farms which did not apply for

CAP payments before the introduction of SPS are starting to operate as part-time farms in order to become eligible for SFP.

- **Effects of changes in SFP on land values**

At present, land prices and rents are positively responsive to income payments, both coupled and decoupled. Based on the statistical trends, it can be concluded that land value, in terms of land sales prices and land rents, is not affected by changes in SFP.

Expert surveys confirmed that decoupled income payments are positively correlated with land value, but their isolated contribution to the increase is estimated to be essential at the moment. However, experts also emphasised that the impact of changes in SFP could be neither isolated nor estimated at the moment.

1 INTRODUCTION

The key aspect of the agricultural reform of 2003, the implementation of which began in 2005, is the decoupling of farmers' direct payments from production. The reform is designed to encourage farmers to adjust their production to market needs and to promote more sustainable farming practices. Decoupled payments are no longer contingent on cultivating a particular agricultural product, or its amount, but they still remain linked to actual agricultural activity on eligible land and to compliance with additional environmental requirements.

Against the background of the reform of the Common Agricultural Policy (CAP) the following analysis, brings into focus the responses of the agricultural sector to decoupled subsidies. In particular it addresses the impact of the Single Payment Scheme (SPS) on land sales and rent prices and therefore on farm structure. It also aims to assess the extent to which the reform advances sound and sustainable agriculture and provides incentives for market-orientated farming practices. The study is based on expert surveys conducted in three selected regions.

The study is structured as follows. It begins with the executive summary of obtained results. The second section then provides an introduction into German agricultural sector and its current situation. Afterwards, in the third section, methodology and data sources are explained. In the following section, drivers of land value, distribution of direct payment, trade with entitlements, specifics of the East German land market, effects of decoupled payments on structural change, are analysed and discussed. Finally, conclusions on the midterm impact assessment of decoupled payments on the German land market are drawn. The three regional case studies are attached to the report.

2 GENERAL CHARACTERISTICS OF THE GERMAN AGRICULTURE

2.1 Structure of economy

Germany's agricultural output is one of the biggest in the European Union. In 2007, nearly 17 million ha land were used as agricultural area (47.6 % of the total surface). 1.3 million people were employed in agriculture (including forestry). The share of agricultural labor in total employment declined from 3.4 % in 1992 to 2.2 % in 2004. In the last 17 years, the number of employees in agricultural sector fell by 32 % (-67 % in the former federal Republic and -33 % in the New Laender). These trends correspond with the trend of the share of agricultural output in GDP. In 2007, agricultural sector contributed 1 % of German GDP. The GDP per capita at current prices is estimated at €29,500 in 2007, an increase of 4.6 % compared to 2006. Overall economic growth declined by 0.4 % in the last year (2006-2007).

2.2 Farm characteristics

There is a general trend towards an increasing average farm size starting with 29 ha in 1990 to 45.7 ha in 2007 (which is a rise by 3 % annually). This trend reflects in turn the constant decline in number of farms: from 630 thousand holdings in 1990 to 360 in 2007. Compared with the agricultural census in 2006, the number of farms declined by 4.9 %. The number of farms operating on less than 75 ha declined by 19.3 % in the last 8 years. During the same time the number of farms with 75 ha and more rose on average by 3 % p.a. As to the shares of agricultural holdings by size, in 2007, 38 % of farms managed on areas under 10 ha, 54.4 % on area from 10 to under 100 ha, and 7.6 % of farms operated on areas with more than 100 ha.

For historical reasons dating back to collective and state farms in the GDR, average farm sizes in the East and West German federal states differ significantly (202 ha and 34 ha respectively). The increase in farm size was accompanied by a significant increase in labor productivity, which rose by 125 % from 1991 to 2007, while agricultural output per hectare remained nearly the same (€2,355/ha in 1991 and €2,354/ha in 2006). 94 % of all German farms with 69 % of the

total agricultural land are individual (family) farms. Most of them are small and part-time holdings managing on average 14 ha/farm. Only 4.8 % of farms with 13.5 % of the agricultural land have the legal form of joint partnership.

Legal entities under public and private law farm (corporate farms) cultivated 17.6 % of land in 2007, in East Germany their share is estimated at 51.8 %. With a total of 2.5 million ha part-time holdings make up an essential element of the agricultural structure in the former territory of the Federal Republic. In the East German regions they score only 0.3 million ha or 10.7 % of all German part-time holdings. Last year, 164,400 farms were managed as full-time holdings. Their average size was 54.6 ha (ranging from 37.9 ha in Bavaria to 237.7 ha in Mecklenburg-Western Pomerania).

2.3 Sales and rental market

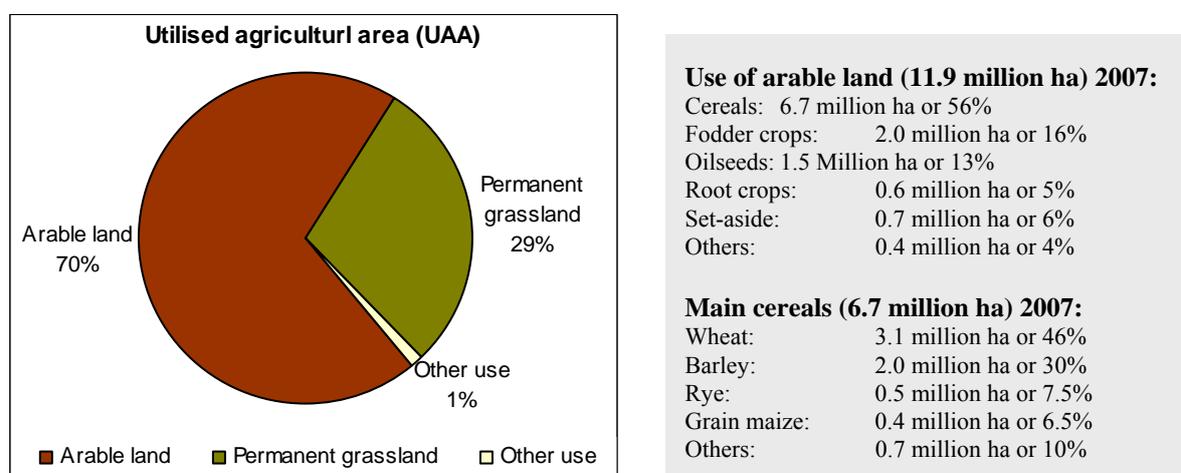
Despite the rapid structural changes in agricultural sector there are hardly any transactions on sales market for arable land or grassland. In 2005 only 0.6 % of agricultural land were sold (58,200 ha in the New Laender and 38,500 ha in the Old Laender)¹. Land prices on the sales market are affected not only by location and soil quality but also by the purpose of use. The highest prices were realized in Bavaria (especially in Upper Bavaria) and in North Rhine-Westphalia (particularly in the Düsseldorf district), in both cases largely due to the high demand for agricultural land for urban or industrial usage.

The reallocation of agricultural land takes place mostly on the rental market. In 2007, the share of rented land in total utilized areas was 61.7 % (10.4 million ha), with regional differences ranging from 44.6 % in Bavaria to 89.9 % in Saxony². The total area of newly rented land in 2005 was 2,275,900 ha. In 2007, 46,500 farms (approx. 13 %) operated *only* on rented land. In West Germany the share of rented land is constantly increasing (from 42.5 % in 1991 to 60 % in 2007). The average share of rented land has been regressing slightly, but this trend is only due to sales transaction by the BVVG (Bodenverwertungs- und -verwaltungs GmbH) in East Germany. Thus, the land market in Germany is primarily a rental market.

2.4 Agricultural commodities

At the beginning of 2007, 70 % of agricultural land was used as arable land and 28.8 % as natural grassland. Areas set aside and fallow land are limited to 0.7 million ha (or 4.3 % of utilized agricultural land). This distribution remains nearly unchanged since 1990.

Figure 1: Utilized agricultural areas (UAA) by the beginning of 2007



Source: STATISTISCHES BUNDESAMT, 2008.

¹ DEUTSCHER BAUERNVERBAND (2007): Situationsbericht 2007. Available on: <http://www.situationsbericht.de>.

² DEUTSCHER BAUERNVERBAND (2007): Situationsbericht 2007. Available on: <http://www.situationsbericht.de>.

Germany has a highly diversified primary agricultural sector. In terms of the total production in 2005, Germany was the EU largest producer of potatoes (19.4 %), oil seed rape (33.8 %), milk (20 %) and pork (19.3 %). It was also the second largest producer of cereal (17.5 %), sugar (21.2 %) and red meat (16.1 %) in the EU. In 2007, Germany accounted for 16.5 % of the total EU cereal production (EUROSTAT). Due to soil quality and climate conditions the commodity mix varies significantly across the country. Crops cover 55.4 % of arable land. Wheat is the most widely grown arable crop in Germany covering around 3.1 million hectares of arable land. Feed and industrial grains are cultivated on 2.6 million ha, industrial crops and fodder crops on 1.55 and 1.96 million ha respectively. Their yield in total, per hectare and area under cultivation remains nearly the same since 1990. For crops such as maize and sugar beets, the area of cultivated land in 2007 shrunk by 10 % and 15 % respectively against 2006. This can be traced back to the downward trend in prices (and partly also in yields per hectare) since 1991.

Total production of crops (measured in hectares under crops) decreased by 5.5 % in the period 2004-2007 and by 2 % against 2006. This decrease is mainly in production of maize, sugar beets and wheat. Areas under rape increased by 7.6 % over the previous year. Vegetables for sale are cultivated on 112,700 hectares of agricultural land (0.3 % more than in 2006). Total area under vegetable cultivation has remained stable at a high level.

2.5 Animal stock

In November 2007, 12.7 million heads of cattle and 26.9 million pigs were kept in agricultural holdings in Germany. Both the number of pigs and the stock of cattle increased slightly by 0.2 % compared to the previous year. The decline in piglet production (-6.1 %) was primarily driven by the presently low prices on the piglet market. Sheep stock recorded the lowest level since 1990, and decline by another 3.4 % compared to 2006. The shares of agricultural holdings by livestock type in 2007 amounted to 37.5 % cattle (excl. dairy cows), 31.5 % dairy cows, 22.4 % pigs, 3.6 % poultry, 3.4 % horses, and 1.6 % sheep. With a share of over 20 % of agricultural output dairy cows stock is the mainstay of German agriculture.

2.6 Organic farming

In 2007, 4.6 % of the total agricultural used area was farmed organically by 3.4 percent of all agricultural holdings. Organic farms have been managed on about 782,500 hectares of utilized agricultural area, 60 % more than in 1999. With the total number of 13,600 holdings organically operating farms scored an increase of 4000 organic farms (or of 41.7 %) against 1999. The average size of organically working farms is also rising. In 2007, it accounted for 58 hectares, which are 15 ha more than the average farm size of the total agricultural holdings. While the amount of the total agricultural used area has remained nearly on the same level since 1991, the area operated within organic farming has still been rising. However, the general trend towards an increasing average farm size applies also to organic farming.

3 DATA SOURCES

The present study contributes to the empirical underpinning of the analysis of the policy influences, in particular the implementation of the SPS, on the land market. To allow for the main interest of the study and associated questions, the methodology adopted for this aim is a combination of qualitative and quantitative approaches. This method enables both description and evaluation of the current situation on the land market in terms of felt and valued effects. Depending on the issue addressed the combination of the methods and sources applied can differ, the main emphasis, however, is on the qualitative side of the combined approach. This methodology determines the character of the study, which is mainly descriptive.

The most important sources of information utilized were:

- Comprehensive literature review;
- Statistical data (Statistisches Bundesamt, EUROSTAT, Statistical Offices of selected Federal States), inclusive the Agricultural Census comprising of Farm Structure Survey and the Census of Land Use;
- Data from the Federal Ministry of Food, Agriculture and Consumer Protection, Federal State Ministries of the Environment and Agriculture of selected regions (=Laender);
- In-depth face-to-face interviews with 8 officials of local Offices for Agriculture and 5 officials of Chambers of Agricultur;
- In-depth face-to-face interviews with 9 representatives of Farmers' Unions and 6 interviews with farmers;
- 1 interview with a bank.

A comprehensive literature review was undertaken in order to identify the relative importance of the different factors that impact land market. The basic approach however, was to use expert interviews to gather *qualitative information* concerning key drivers of land value and the impact of decoupled payments on land market. Initially 25 interviews were proposed. Since all contacted persons and offices agreed to interviews, three additional interviews could be carried out.

Extensive, in-depth face-to-face interviews were carried out with officials of the local Offices of Agriculture and/or Chambers of Agriculture in each of the three case study regions. These interviews were designed to obtain qualitative assessment of the impact of the SPS implementation on land market. Collection of data and information was extended to surveys of farmers' unions and rural banker. Finally, interviews were conducted with a number of individual farmers that have an important role in a given region due to their farm size. Such comparison of different views on the same subject was needed to draw a representative picture of the changes in the land market.

The rationale for choosing representatives/officials of local Offices of Agriculture and other authorities for interviews was to identify different personal perceptions of the effects of SPS implementation in the same region. At the same time, the heterogeneity of a given region, stemming from different natural, historical and economical conditions, could be met. Finally, the selection will allow an assessment of technical aspects of the distribution of entitlements and perceived success of the CAP measures. In order to keep the study manageable and representative, the interviews were limited to selected regions.

The techniques used involved statistical analysis of data on land prices and rents, macroeconomic data, distribution and transfer of entitlements, and other relevant information. Evaluation of key statistics aimed at providing an overview of the occurrence and frequency of relevant issues. At the same time, it was to underlay qualitative assessments of the impact of the SPS implementation and other facts with statistical figures. In particular, statistical data were used to identify the rate of change in key figures such as general economic conditions, sector growth, price level etc., for various years and link the findings to the policy influences on the land market.

Quantitative data are gained mainly by using EUROSTAT, Federal Statistical Office (Statistisches Bundesamt) and Statistical Offices of Bavaria, Lower Saxony, and Saxony. Additional important sources are the Federal Ministry of Food, Agriculture and Consumer Protection and the Federal State Ministries of the Environment and Agriculture of selected regions. Thanks to the granted access to the German database on entitlement transfer (ZID³) the information on transfer and

³ ZID (*Zentrale InVeKos Datenbank*), German central database on entitlement transfer. The database is run by the State of Bavaria on behalf on the federal states. *InVeKos* registers entitlements as well as the control activities put in place by the federal states.

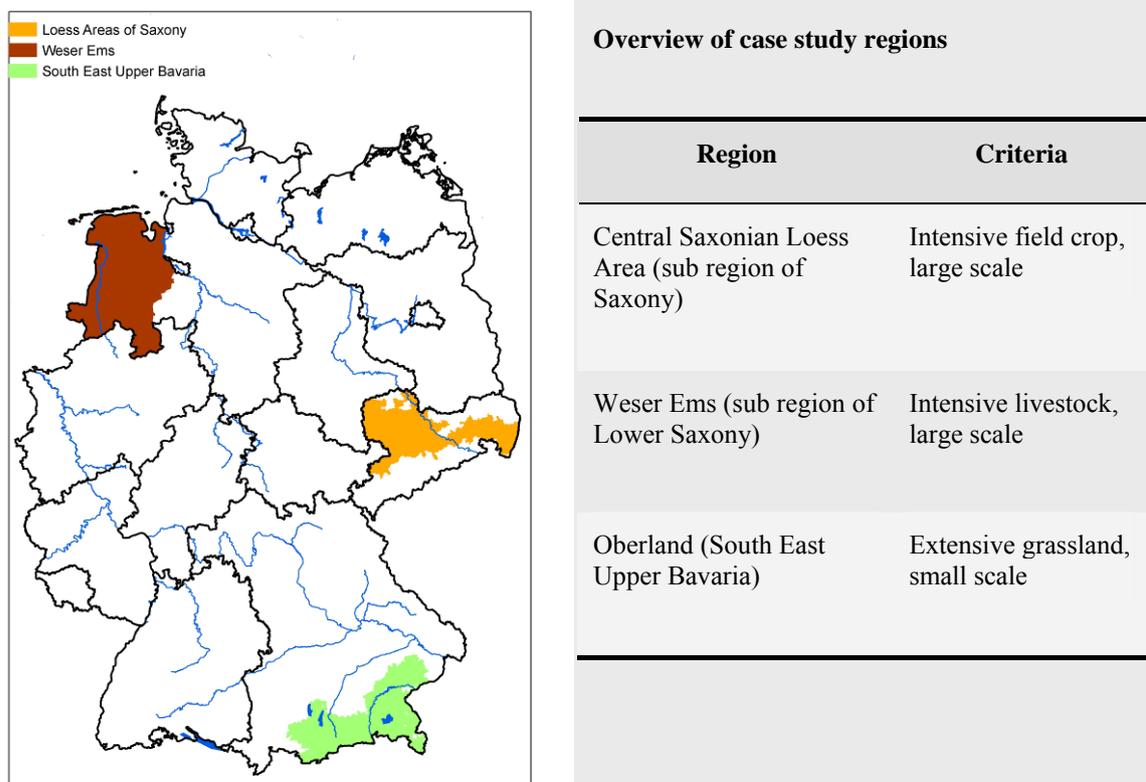
value of entitlements could be collected. References to other than listed sources are footnoted or indicated in parentheses.

4 SELECTION OF THE CASE STUDY REGIONS

For various reasons, the structure of German agriculture in terms of farm legal form, specialization, size, productivity etc. is very complex and heterogeneous. Case study regions must thus be selected in such a way as to adequately reflect this heterogeneity. The legacy of agricultural policy in former East Germany is still discernible in local farm structures and at the productivity level. The selection should therefore include regions from East Germany (with large corporate farms) and West Germany (small/medium family farms with or without livestock). It should also allow addressing issues like the influence of ownership structure and local market power on land markets. The selected regions should also reflect the prevailing production structures. The intensity of production, in particular, has a significant effect on the competitive situation in land markets as land is not only used for production but also as manure disposal area. A comparative evaluation of agricultural policies in the Old and New Laender is not an objective of the present study. However, the references to East/West differences are occasionally necessary for highlighting the specifics of German agriculture.

Though all regions share the same implementation of the Single Payment Scheme, the value and the distribution of the entitlements differ significantly across regions. This has an influence on the trade and the allocation of entitlements and of agricultural land. Since entitlements are only tradable within regions/Laender, sale prices and rents reflect the amount and quality of the available agricultural area in each region. Based on these considerations the following regions were selected⁴:

Figure 2: Case study regions



Source: Own illustration.

⁴ For more detailed presentation of case study regions see Regional Reports in Appendix.

The chosen regions encompass farms with different: (a) mode of operation (intensive/extensive production), (b) scale of farm operations (small/large farms), (c) legal form (private/corporate), and (d) specialization (field crop, livestock, mixed).

5 IMPLEMENTATION OF SPS

The following section describes how the single payment scheme (SPS) has been implemented in Germany. The description is based on information taken from BMELV (2006). The framework for the national implementation of the SPS is given in Council Regulation (EC) No 1782/2003, while the rules for implementation appear in Commission Regulation (EC) No 795/2004 and Commission Regulation (EC) No 796/2004. According to these acts, there is some degree of flexibility for the national implementation of the SPS regarding introduction, extent and implementation. Accordingly, the abovementioned acts were put into national law according to the "Gesetz zur Umsetzung der Reform der Gemeinsamen Agrarpolitik vom 21. Juli 2004 (BGBl I S. 1763)" and the "Bekanntmachung der Neufassung des Betriebsprämien durchführungsgesetzes vom 26. Juli 2004 (BGBl. I S. 1868)".

In Germany, the 2003 CAP reform took place on 1st January 2005, which was the earliest possible date stipulated by the above regulations. For its implementation, Germany opted for the so-called hybrid dynamic model, which is a combination of the standard (historical model) and the regional model, i.e., one part of the direct payments is distributed according to the historical model and the other part is disbursed according to the regional model. In the historical model, the payments a given farm receives per hectare are fixed according to any payments it may have received in the past. In contrast, in the regional model, the level of payments is the same throughout the region. The *hybrid* part of the model means that for the period between 2010 and 2013, the historical decoupling scheme is stepwise transformed into a purely regional model.

In addition, Germany opted for a regionalised version of the hybrid dynamic model, which means that the regional component of the single farm payment SFP was fixed on a regional level. In principle, these premium regions are the same as the federal states. Three exceptions are the city states of Hamburg, Berlin and Bremen, which were assigned to the surrounding federal states, thus resulting in 13 premium regions. In 2005 a national ceiling for payment entitlements was set at €5.148 billion (Ibid). From this amount, 1 % was used to set up a national reserve⁵. Principally, the share for the regional ceilings could have been fixed according to the premium payments paid in a region during the reference period. However, this would have led to large differences in the values of the premium entitlements. To avoid that imbalance, 35 % of the payments were distributed according to the eligible area of a region and only 65 % according to actually received payments during the reference period. This share was chosen in a way that allows no region to lose more than 5 % of its premium payments, and at the same time the payments per hectare do not differ more than €100 between two regions.

As Germany has opted for a hybrid scheme, the payments a farm receives are comprised of two parts – a farm-specific and an acreage-based regional portion. Here, the farm-specific part results from the direct payments a farm received in the reference period between 2000 and 2002. These direct payments include the special bonus for male cattle, the slaughtering premium for calves, the suckler cow premium, the ewe premium, 50 % of the extensification bonus for cattle, the milk premium (in the second reform stage), 25 % of the starch potato premium and the decoupled part of the dry food premium (Ibid). As there were no direct payments for milk between 2000 and 2002, the reference volume of a farm on 31st March 2005 was taken as a reference (Ibid). In 2006 and 2007, the farm-specific payments were further extended.

⁵ The functioning of the national reserve is explained in section 0.

To calculate the acreage-based (regional) part of the payments, first the sum of all farm-specific payments was added up and then subtracted from the regional ceiling. Thus, the regional part of the payment includes the direct payments for Grand cultures, seed payments, payments for grain legumes, the hops premium, 75 % of the decoupled part of the starch potato premium, the slaughtering premium for cattle, 50 % of the extensification bonus for cattle and the balance of the regional redistribution (Ibid). In order to calculate a per-hectare-value, in a second step this regional part of the payments was divided by the eligible area of a region, whereas a differentiation was made between permanent pasture and arable land (Ibid). This differentiation was based on a value ratio between arable and permanent pasture for each of the thirteen trading regions.

In order to calculate the regional part of the payments a farm receives, the eligible area of a farm was multiplied by the values per hectare of the according region and type of land. Finally, to render the SPS manageable and flexible in further years, both the farm-specific component and the regional component were transformed into so-called premium entitlements (entitlements). Here, the amount of eligible area a farm held on a particular date (17th May 2005) determined the number of entitlements a farm received. To calculate the value of each entitlement, first the region-specific part was assigned to every entitlement depending on land type. In a second step, the farm-specific portion was distributed equally over all entitlements of a farm. This additional value is also called a top-up and is inseparably bound to the entitlement.

In 2006 and 2007, the farm-specific part of every premium entitlement was again adjusted due to the third stage of the milk reform, the partial decoupling of the tobacco premium and the first stage of compensation from the sugar market's reform⁶.

In addition to the "normal" entitlements as described above, there are four other kinds of entitlements in Germany, which differ in their rules of assignment, activation and transfer. First are the "set-aside" entitlements, which are calculated in the same way as normal entitlements but can only be activated on a set-aside area. The number of set-aside entitlements was determined by multiplying the eligible area of a farm by a region-specific set-aside ratio. The second group includes the so called OGS entitlements. In contrast to the entitlements of the first group these entitlements can also be activated on land used for the cultivation of non-permanent fruits, vegetables and starch potatoes. The third group are the so called "special" entitlements. Special entitlements result from a situation when a farm received direct payments in the reference period but holds only an extremely small amount or even no eligible area in 2005 (mainly workers of larger Eastern German cooperative farms who fattened some animals on their own account). For this group of entitlement the activation is linked to the stocking and not the land. The fourth group are entitlements from the national reserve. Here some special restrictions regarding the tradability and activation of entitlements apply.

As stated above, starting in 2010, the hybrid scheme will be transformed stepwise into a pure regional model until the year 2013. Thus, for 2009 a regional target value is calculated which equals the sum of the value of all payment entitlements divided by the number of all entitlements in 2009. At this point in time it is not possible to calculate the exact values, as some further adjustments will take place before 2009. A current estimation of the target values is given in BMELV (2007) and displayed in Table 1.

⁶ In February 2006, the common market organization's sugar reform took place (BMELV, 2006b). A main part of this reform is the stepwise reduction of the minimum price for sugar beets. As compensation for this price decrease, a premium ceiling for the last stage of the reform was fixed for Germany with an amount of €278 million for decoupled payments. Based on the contracted amount of sugar production a farm holds with a sugar refinery or distributor in fiscal year 2006/2007, compensation was calculated and added to the payment entitlements a farm owned on 15th May 2006. This specific part of the respective entitlements will then be increased in three steps until 2010.

Table 1: Estimates for uniform regional payment entitlements in 2013

Region	€/ha
BW	310
BY	354
BB & BE	301
HE	299
MVP	330
NS & HB	353
NRW	359
RLP	295
SL	258
SN	359
SA	355
SH & HH	359
TH	347
Germany	340

Source: BMELV, 2007.

6 POLITICAL REASONS

The political reasoning for the dynamic hybrid scheme is that the Ministry of agriculture prefers a regional uniform payment over the historical model because the regional model:

- a) Is a comparably simple system;
- b) Fosters regions with a high share of permanent pasture and extensive land management compared to the current system;
- c) Is easier to justify (BMELV, 2005).

However, to both circumvent a very high redistribution of payments and to not overstrain the adaptiveness of the farms in the beginning of the reform, a hybrid scheme was chosen which should be transformed stepwise in a pure regional model (Ibid). In contrast, the biggest farmers union (Deutscher Bauernverband) argued for a continuation of the hybrid model in favour of a transformation into a purely regional model, because the redistribution of payments would come very much at the expense of animal producing farms. One suggestion was to exclude the milk premium from this transformation (BAUERNVEBAND, 2004a, 2004b).

6.1 Eligible area in country

In principle, all land which is used primarily for agricultural production and kept in "good agricultural conditions" (GAEC) can be used to activate entitlements (BMELV, 2006, 73). Only the current use of an area is decisive for whether a plot is eligible to activate entitlements. This means an eligible parcel need not be used for agricultural before the year of activation. In order to be eligible, the land must be used to produce commodities, or must be mulched at least once a year, or the aboveground biomass must be cut and removed at least every second year. In addition, landscape elements, if they belong to certain categories and up to the respective specified size limit, belong to the eligible area as well (BMELV, 2006, 185)⁷.

⁷ Generally, the size of a landscape element must not exceed 25% of the plot.

Prior to 2007 areas stocked with permanent cultures (fruit trees, vineyards) did not count towards the eligible area (BMELV, 2006, 73). In 2008 additional entitlements will be issued for these areas. However, these entitlements can be activated on any type of area and any type of entitlements can then be activated on these areas. Furthermore, till 2007 on areas cropped with non-permanent fruits, vegetables and starch potatoes, only SFP which are marked as "OGS" can be activated.

Some types of land do not currently count towards the eligible area. Rather, they belong to three different cases. The first deals with rough grazing areas, which are not included in the eligible area, if:

- The dominant species in the sward are dwarf shrubs (e.g. Atlantic heath), since these areas do not meet the literal definition of grassland or arable land given in Commission Regulation 795/2004;
- They are in silvo-pastoral systems and the cover of the tree layer exceeds designated threshold values and the composition of the underbrush does not fulfil certain floristic criteria;
- The productivity of the stand is considered to be too low to allow the sensible utilisation of the area from an agronomic and agro-economic point of view (cf. BAYStMLF, 2004).

The second group comprises areas whose primary use is not agriculture. These types include dykes, military training grounds and some nature conservancy areas. For instance, only two-thirds of the grazed areas within Bavarian military training grounds are eligible for SFP. In these cases, the status of a specified plot depends on the details of the tenure or management contract and the interpretation manuals of the respective state the plot is located in (cf. BayStMLF, 2004).

The third group includes areas which are managed in way that strongly resemble agricultural practices, but which are managed by natural or legal entities that do not fulfil all preconditions of being a farmer in the sense of the respective legislations (e.g. a nature conservancy organisation which only conducts landscape management on a provisional basis). According to BAYStMLF (2004), the most essential preconditions are that the farm must:

- Aim for sustainability and do this from a long-term perspective;
- Aim to make a profit.

Furthermore, the farmer must:

- Manage the farm independently but may use the assistance of third parties;
- Bear the economic risk of the undertaking;
- Be in de facto and de jure control of the production assets.

The minimum size of a parcel of eligible area required to activate an entitlement, as well as for all other area based payments, is 0.3 ha according to EC-regulations. However according to the statutory regulations the federal states have the right to define a minimum size below 0.3 ha. Some federal states opted for this and have set the minimum size to 0.1 ha. There is no upper limit for an eligible parcel.

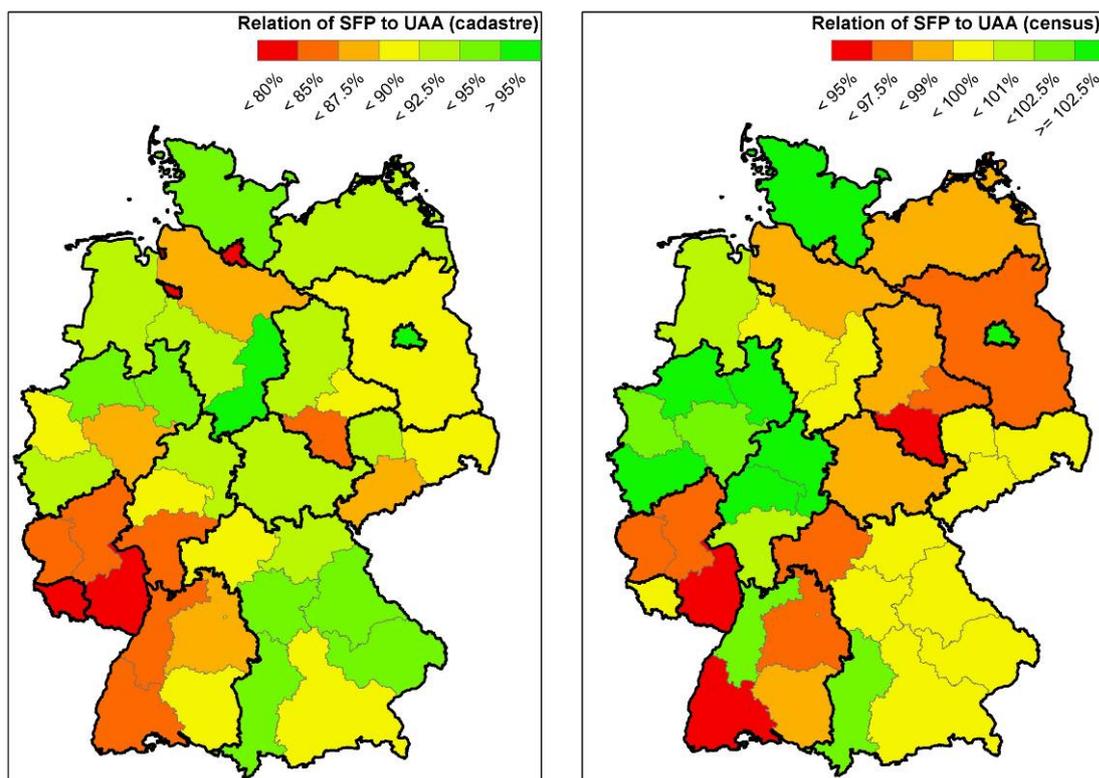
To provide insight into the tradability of entitlements and the expected market value of an entitlement, one requires information about the scarceness of entitlements. On an overall level their scarcity is reflected in the ratio of the number of entitlements and eligible land, as well as the share of eligible land and the total utilised area of a country. Unfortunately an appraisal of the situation is not easy in Germany, where there are three sources from which the amount of utilised agricultural area can be extracted. They are the Agricultural Census (ASE), which comprises the Farm Structure Survey and the Census of Land Use, the Land Register and the Integrated Administration and Control System (IACS). The problem is that every statistic is

based on a different basic population, whereas an exact quantification of the differences is not possible. Based on the Land Register there are 18,932 million hectare of land in agricultural use. However, this figure seems to overestimate the eligible area, as small structures like barns, dung piles, ditches, hedges and small groves are also included. In contrast, the area in agricultural use reported in the Census of Land Use is 17,035 million ha. Here we assume an underestimation of the eligible area, as some areas which are eligible for activation are not included, for example some landscape components and the area which is used by farms smaller than 2 ha. For the land register from most regions, over 90 % of UAA is activated by a premium entitlement. However in urban agglomerations this figure is about 80 %, even when the UAA is adjusted by permanent crops and vineyards. On the level of administrative districts, this relationship is displayed in Figure 3. Another indicator of the scarcity of premium entitlements is the relationship of distributed entitlements and the actually activated entitlements. For 2005 this relationship is displayed in Table 2.

Table 2: Share of not activated entitlements in 2005

Region	Share of un-activated entitlements in 2005	Average value of distributed entitlements	Average value of un-activated entitlements
SH & HH	1.2 %	356	189
NS & HB	0.6 %	347	325
NRW	0.5 %	352	184
HE	3.4 %	295	269
RLP	1.7 %	289	255
BW	1.2 %	307	234
BY	0.2 %	351	198
SL	1.2 %	259	180
BE & BB	0.3 %	299	145
MVP	2.3 %	327	264
SN	0.7 %	356	362
SA	1.0 %	348	253
TH	0.3 %	344	216
TOTAL	0.9 %	335	253

Source: Own calculations.

Figure 3: Relationship between number of premium entitlements and UAA

Source: Own calculation.

6.2 National reserve entitlements

The National Reserve is designed to create a financial scope for dealing with certain situations caused by the switch from the coupled to decoupled subsidy regimes and works as follows (BMELV, 2005a, pp. 49-50): According to Article 42 of Council Regulation (EC) No 1782/2003, Member States can channel additional payments from national reserve for sector specific issues, namely as (1) entitlements for commencing farmers, (2) entitlements for farmers in a special situation, and (3) entitlements for farmers in regions subject to restructuring and/or development programs. While national legislation regulates granting entitlements in the 1st and 3rd cases, the allocation of entitlements to farmers in special situations must be guaranteed in every Member State. Germany has opted to incorporate all 3 cases into the national legislation and to divert 1 % of direct payments into a national reserve. Entitlement received from national reserve funds will expire if they were not used during the next 5 years after allotment. The intention of the national reserve is to help those farmers who – due to particular circumstances – would otherwise be disadvantaged by the sole application of the Single Farm Payment Scheme. In addition, national reserve funds can be used to stimulate specific production forms such as organic farming.

In Germany, national reserve can be granted to the following categories:

- (1) Case of hardship: Force majeure; participation in agricultural environmental programs;
- (2) Farmers in a special situation: Investments (started before 15 May 2004); transfer of leased land (leased before 17 May 2005); re-conversion of production by abandonment of dairy farmers (by 15 May 2004 the latest); purchase or rent of a farm (by 15 May 2004 the latest); leasing of reference amounts of milk;
- (3) New entrants (farmers who started an agricultural activity after 17 May 2005; closure date for applications is 2007).

In 2008, farmers managing fruit tree plantations and tree nurseries have a single possibility to claim entitlements from the national reserve. In this case, land that was used as agricultural land

on 15 May 2007 is eligible for entitlements. The closing date for applications is 15 May 2008. For each hectare of eligible land, €50 can be granted. Adjusted for contribution to the national reserve, this payment amounts effectively to €49.50/ha Germany-wide until 2010. From 2010 to 2013 they will be scaled back annually – like all other direct payments – to the level of regionally uniform payments (§6 Betriebsprämienführungsgesetz). Allotment of entitlements does not depend on the minimum number of hectares being used, but they will be paid out only if the total value of entitlements exceeds €100. However, these entitlements, though being granted from the national reserve, will *not* be recorded as national reserve entitlements, and therefore they are not subject to obligations applied to national reserve entitlements. Given the number of fruit tree plantations and tree nurseries in Germany, the amount of payments that can be claimed is estimated at €4 million.

6.3 Cross compliance

The most significant trait of the recent Common Agricultural Policy reform is the shift in its objectives towards environmentally-responsible agricultural practices. Therefore, all farmers claiming direct payments are subject to Cross Compliance. Cross Compliance (CC) includes a set of standards (BMELV, 2005a, pp. 85-89; BMELV, 2006a, pp. 53-62) that frame the preconditions for the receiving direct payments and some rural development payments from the European Union. Cross Compliance comprises two components:

- Compliance with Good Agricultural and Environmental Conditions (GAEC);
- Compliance with Statutory management Requirements (SMRs).

While the SMRs are made up of 19 EC Regulations and Directives applied directly at the farm level, the minimum standards for maintenance of the land in good agricultural and environmental condition have to be defined by the Member States. The national laws should be consistent with the EU framework.

Selected standards of GAEC

The main German Regulation related to the GAEC is the Direktzahlungen-Verpflichtungenverordnung (DirektZahlVerpflVO) of 4 November 2004 (BGBl. I S. 2778): Verordnung über die Grundsätze der Erhaltung landwirtschaftlicher Flächen in einem guten landwirtschaftlichen und ökologischen Zustand (in conjunction with Direktzahlungen-Verpflichtungengesetz (BGBl. I S. 1763, 1767) of 21. July 2004). It is based on EC Treaty, Article 249 and Council Regulation (EC) No 1782/2003, Article 4, and includes requirements for minimum soil protection (soil erosion, soil organic matter, soil structure) and minimum farmland management (landscape features, set-aside land). The Regulation is effective from 1 January 2005.

Statutory Management Requirements (SMRs)

Statutory Management Requirements (SMRs), along with Good Agricultural and Environmental Conditions (GAEC), are the constitutive component of the Cross Compliance Regulations. The SMRs must be implemented in the national legislation in accordance with 19 EU Regulations and Directives. Failure to comply with the resulting obligations may lead to reductions or complete loss of direct payments. Control mechanisms and sanctions related to non-compliance with SMRs are the same as for GAEC obligations.

Farmers' compliance with AEGC and SMRs requirements is ensured by means of national legislation as well as physical and/or administrative inspections. Control bodies of sector or paying agencies carry out inspections and assess their results. Where necessary, they also decide and initiate sanctions.

Farm Advisory System (FAS)

The Council Regulation (EC) No 1782/2003 obliges Member States to establish, by 1 January 2007, farm advisory systems. Services and information provided by Farm Advisory System should help farmers to meet Cross Compliance requirements on SMRs and GAEC.

Given the numerous current requirements to be fulfilled by farmers, it is expected that the demand for advisory support will be high. Therefore sector agencies in each federal state facilitate advisory activities carried out by accredited private advisory services. Advisory services shall provide farmers with recommendations concerning obligations to be met, sanctions, removal of weak points and follow-up actions. Farm advisory tools that are currently set up in Germany are (1) booklets/brochures, (2) check lists, (3) newspaper/periodical news bulletins.

The advisory and monitoring systems for cross compliance measures are mostly built on the existing systems (agricultural, veterinary and nature conservation agencies of each federal state). Printed material, electronic material and face-to-face advice are the three approaches used by FAS. Advisory services related to compliance with SMRs and GAEC as well as the implementation of internal management system are also eligible for financial support. Compared with other FAS tools implemented in other Member States there are just a few tools which bundle SMRs and GAEC relevant information and are accessible by all farmers in all federal states⁸. According to the CIFAS Study (2006) these tools are very frequently used by both farmers and advisers⁹. Great importance is attached to the enforcement of self-assessment tools to guarantee compliance with sound environmental practices and high standards of animal welfare. The usage of quality assurance systems is highly recommendable but *not* compulsory.

7 AGRICULTURAL LAND REGULATIONS

National legislation of the Member States provides a practical set of standards for agricultural market that must be consistent with the EU framework. General regulations and definitions related to the sales and rental market are codified in the Civil Code and the Law on Agriculture. The main legal bodies of German land law in a narrower sense are the so called *Landpachtverkehrs-gesetz* and *Landverkehrs-gesetz*. These constitutive laws are supplemented by procedural regulations of each Federal State. The following overview summarises the key federal laws and regulations that are of high importance for agricultural sales and rental market.

- **German Civil Code *Bürgerliches Gesetzbuch* (BGB)**, last amended on 26 March 2008 (BGBl. I p. 441)

Since sale and rent contracts are subjects of private law, some basic concepts such as definitions of contracts, capacity to contract, adjustment or termination of contract, claims arising from ownership etc. are codified in the German Civil Code (BGB). Sale contract (act of sale) is defined in § 433 BGB. §§ 581-597 BGB are dealing with rental agreements in general. Land rent contracts are defined in §§ 585 ff. BGB as a mutual usufructuary agreement on property (res) and rights. Rights and duties of tenant and landlord are specified in §§ 585-597 BGB.

- **Law on Agriculture *Landwirtschaftsgesetz* (LwG)**, last amended on 13 December 2007 (BGBl. I p. 2936).

Law on Agriculture is a systematic compilation of laws concerning the core aims of German agricultural policy. These main aims comprise (1) assurance and facilitation of agriculture by means of economical and agricultural policy, (2) best possible supply of food, (3) balancing drawbacks and differences to other sectors of economy, (4) enhancement of agricultural productivity, (5) equalization of social and economic opportunities for people working in agricultural sector.

⁸ CIFAS Study Report, 2006, p. 11.

⁹ Ibid, pp. 47-51.

- **Law on the Sale of Agricultural Land *Grundstücksverkehrsgesetz (GrdstVG)***, last amended on 13 April 2006 (BGBl. I, p. 855).

This law is designed to comprehensively deal with issues related to ownership of land. Its main background is the property guarantee codified in the Article 14 of the Basic Constitutional Law *Grundgesetz (GG)*. The Law on the Sale of Agricultural Land regulates procedure of land sale transactions. Thereafter every sale of agricultural or forest land, that is bigger than a certain minimum size, requires a permit by regulatory authority (*Genehmigungsbehörde*) according to § 9 GrdStVG. The minimum size is set by each Federal State (e.g. 2 ha in Bavaria). The *Genehmigungsbehörde* can disagree to transaction during the first month after the sale announcement. During this time, the *Genehmigungsbehörde* examines if there are pre-emptive rights on the given land area. In case of land consolidation, for instance, the neighbouring farmer has a pre-emptive right against a non-farmer. Pre-emption rights according to the laws on natural preservation or to the forest laws (which are regulated by the Federal States) might apply. Justification of the refusal can be an inefficient allocation of agricultural land, uneconomical reduction of land and sale price significantly higher or lower than the value of the given plot.

- **German Reich Settlement Act *Reichssiedlungsgesetz (RSiedlG)***, last amended on 19 June 2001 (BGBl. p. 1149).

The Reich Settlement Act *Reichssiedlungsgesetz* regulates the pre-emptive right for state/municipalities in case of land consolidation (e.g. due to urban development measure). The *Genehmigungsbehörde* forwards the contract to the *Siedlungsbehörde*. The *Siedlungsbehörde* requests pre-emptor/owner whether the owner intends to set up another agricultural or forestry operation or claim replacement agricultural or forestry land. The results of such requests will be forwarded to the *Genehmigungsbehörde*.

- **Law on the Rent of Agricultural Land *Landpachtverkehrsgesetz (LPachtVG)***, last amended by Article 15 of this Law on 13 April 2006 (BGBl. I p. 855).

Rent of agricultural land is subject of both private and public law. While the Civil Code (private law) regulates the rights and duties of tenant and landlord, the Law on the Rent of Agricultural Land (public law) governs the reporting and registration procedure of land rent transactions and specifies measures that can be applied by non-compliance with the law. The application of land rent law is comparable to that of land sales. Every transaction on the rental market has to be reported to the responsible office. There is also a fixed minimum size (defined in each Federal State) above which the obligation applies. The *Genehmigungsbehörde* can disagree during the first month after response. Reasons for refusal of transaction are the same as for the GrdstVG.

- **Building Law *Baugesetzbuch (BauGB)***, last amended on 21 December 2006 (BGBl. I p. 3316).

To assure transparency on the land market, the *Baugesetzbuch* stipulates to establish an independent advisory committee. This committee consists of a chairman and several voluntary surveyors. Their task is to record land sales prices, to ascertain standard land values and to value land. This law is supplemented mainly by land register of ownership and other legal rights in plots (*Grundbuch*) and cadastre (*Liegenschaftskataster*) that provides a technical survey of the land. Land registration procedure applied by both institutions is codified in the Regulation on the Land (*Grundbuchordnung*), which is the same for all Federal States.

Additional regulations in East Germany

In the course of the German Reunification, special laws that concerned privatization and reorganization of state-owned areas were adopted: the Agricultural Adjustment Law (*Landwirtschaftsanpassungsgesetz*,) and the State Agency Act (*Treuhandgesetz*). The Agricultural Adjustment Law governed the liquidation of the LPG or their transformation to new legal forms. It also made provisions for restoration of property rights to former landowners and the distribution of the LPG assets among the former members. The State Agency Act enabled the foundation

appointed the State Agency *BVVG* to manage the privatization of the state-owned farms. This special legal frame has had a decisive impact on the development of the East German rental market.

- **Compensation and Indemnity Act *Entschädigungs- und Ausgleichsgesetz (EALG)***, last amended on 22 September 2005 (BGBl. I, p. 2809).

The *EALG (Entschädigungs- und Ausgleichsgesetz)* and *FlErwV (Flächenerwerbsverordnung)* were released due to privatization and reorganization of state-owned areas. The trust company *BVVG (Bodenverwertungs- und -verwaltungs GmbH)* is the authority responsible for reassignment and privatization of the state-owned plots. Until 2009, physical and legal (e.g. LPG follow-up companies) entities that rented and used the land for at least 6 years, can buy a limited scale of it at reduced price (65 % of the current market price). Former farmers or owners, their heirs or spouses are also allowed to use their guaranteed compensation to get land from the *BVVG* at reduced price, even if they no longer perform any farming activity. During a period of 20 years after the sale of *BVVG*-managed land areas, the *BVVG* has to agree on every land sales transaction. In this period the *BVVG* is also authorized to cancel the contract in case the land is not used agriculturally or the operational concept of the buyer changed significantly.

- **Regulation on Acquisition of Agricultural Areas *Flächenerwerbsverordnung (FlErwV)***, last amended on 31 October 2006 (BGBl. I, p. 2407).

This Regulation substantiates the *EALG* and specifies its application.

8 LAND MARKET DEVELOPMENTS

The main objective of this study is to analyze the effects of decoupled payments on land value and on transactions on land market. In order to target this question, the changes in land value in response to changes in its main determinants must be identified. For this purpose a closer look at the land market development is needed.

8.1 Assessment of current situation

The recent developments on agricultural market have led to an increase of rents nationwide and of sales prices in the East German regions. The most important reasons for this are:

- (1) Significant rise in prices for agricultural products worldwide;
- (2) Growing demand for farmland by both farmers and non-agricultural investors;
- (3) High reservation prices of land suppliers accompanied by a moderate land supply by private owners.

The current dynamics on the sales and rental market in East Germany is largely influenced by the lasting active role of the state trust holding *BVVG (Bodenverwertungs- und -verwaltungs GmbH)*¹⁰.

8.2 Sales market

In the last 5 years the sales market has remained relatively stable. In this period only 0.6 % of agricultural land changed its owner annually. The main trait of the German agricultural sector, its two-fold nature, has made an even stronger appearance in the last years. An overview of transactions on sales market in 2006 is given in the following table:

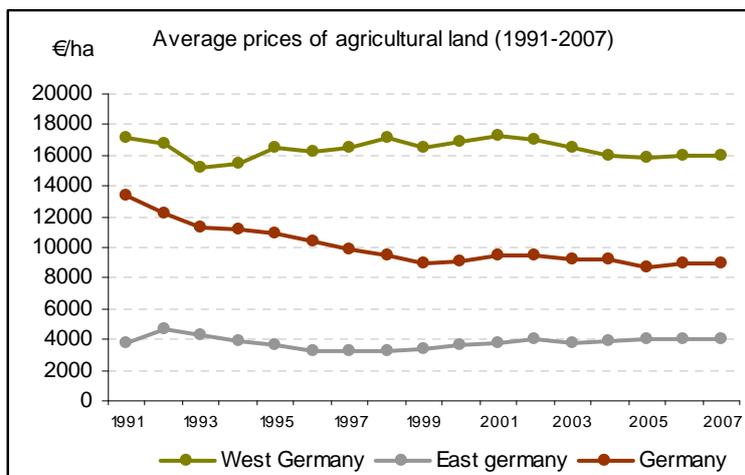
¹⁰ In the Anglophone literature it is also known as *The State Agency for Privatization*.

Table 3: Land sales market (2006)

	Germany	West Germany	East Germany
Average price for UAA (€/ha)	8,909	15,941	4,040
Total transacted area (1000 ha)	98.63	39.79	57.48
Total number of land sale transactions (1000)	38.40	26.37	12.01
Average plot size transacted (ha)	2.53	1.51	4.79

Source: STATISTISCHES BUNDESAMT, 2008.

The total amount of land sold at market value annually has remained almost unchanged since 2005. During the same period, the number of areas sold at reduced prices according to the Compensation and Indemnity Act¹¹ has dropped significantly, which has led to the overall decline in areas transacted on sales market.

Figure 4: Average prices of agricultural land (with projected values for 2007)

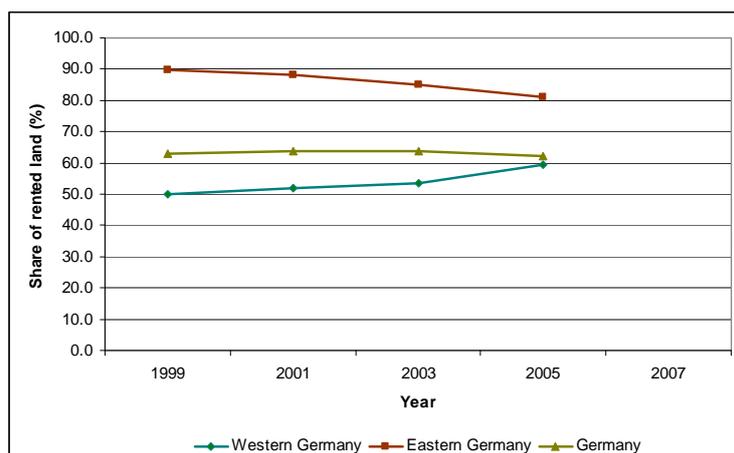
Source: STATISTISCHES BUNDESAMT, 2007, and estimated values.

The land prices have also been relatively constant. Although land sales prices in West Germany have edged down, while they has slightly but steadily increased in East Germany, the gap between the two price levels has been nearly unchanged in the last 17 years. With the present share of 40 % of owned farmland and 0.6 % of new sales transaction p.a. the sales market plays a secondary role in the German land market. Taking into account the sales transactions at reduced prices, the sales market in East Germany reveals its own strong dynamics.

8.3 Rental market

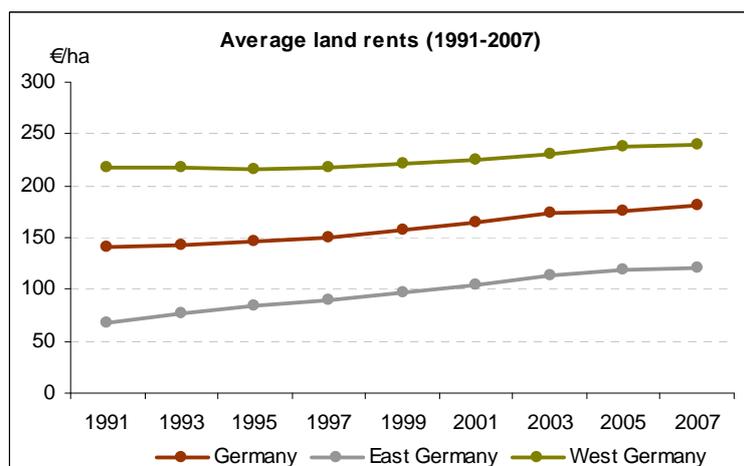
On the aggregate level the share of rented areas of the total amount of agricultural land has been almost unchanged in the last 5 years. With regard to the trend since 1991, the share of rented areas slightly dropped for the first time in 2005. The changes in the share of rental agreements have continued in the opposite direction in both parts of Germany, though the differences have not diminished over that time. While the share of rented areas has been rising in the West German regions, the share of owned land has been increased in the East regions (cp. Figure 5).

¹¹ German: Entschädigungs- und Ausgleichsleistungsgesetz (EALG).

Figure 5: Share of rented land

Source: STATISTISCHES BUNDESAMT, 1999-2007.

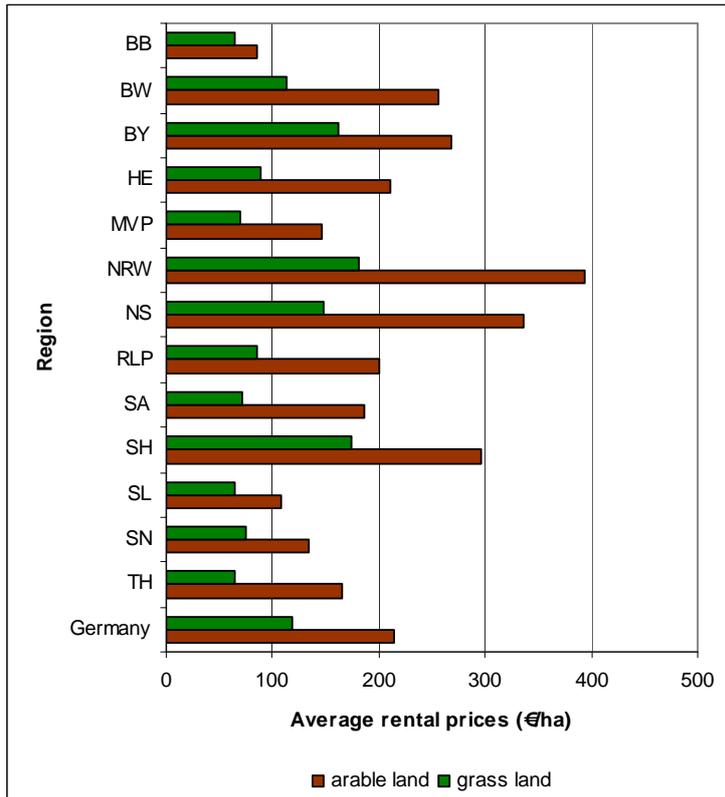
Regarding the rental prices the opposite development could be observed. Compared to land sales prices, average rentals for agricultural land nationwide as well as in the East and West regions have been steadily rising. Land rents in both parts of Germany have the same upward trend, though the rents in East Germany are still lower than in West Germany. Whereas there is only a slight increase of rental prices in Western Germany in Eastern Germany rental prices increased for about 14 % over the last four years. Although we can observe a convergence of rental prices between Western and Eastern Germany the ratio is still almost 2:1 in 2005.

Figure 6: Average land rents

Source: STATISTISCHES BUNDESAMT (2007) values for 2007 are projected based on data from AES for the case study regions.

There exist a number of explanations for this gap. For instance, BALMANN (1999) shows, that these are, the low livestock density in East Germany, and unexploited returns to scale by family farms in West Germany, Another explanations lies in the way the BVVG awarded rental contracts after the reunification. The administrative prices by the BVVG served as focal point for the rental market. Although this changed in the last years (as we discuss later on) the effects are still present due to the often long duration of rental contracts.

On the regional level a big heterogeneity can still be found. In Figure 7 the rental prices for arable and grassland on the level of federal states is displayed. The states with the highest rental prices are North Rhine-Westphalia (NRW), Lower Saxony (NS) and Schleswig-Holstein (SH), whereas the lowest prices can be found in Brandenburg (BB), Saarland (SL) and Saxony (SN).

Figure 7: Rental prices for arable and grassland in Germany on Federal State level

Source: SITUTATIONSBERICHT, 2008.

8.4 Specifics of the East German land market

8.4.1 New legal and economic conditions

Despite 17 years of common national agricultural policy the share of rented areas in East Germany is still significantly high. In 2007, it averaged 82 %, which is 20 % more than in West Germany. Given this background, a brief review of the transformation of the East German agriculture is needed to explain this bias toward land rent.

Development and adjustment measures initiated in the course of the German reunification triggered a fast development of rental market in East Germany. The most important reasons for these high dynamics were the favorable institutional conditions and substantial financial support¹². As to mitigate the economic adaptation pressure on the farmers, who now had to produce under the same legal and economic conditions, financial adjustment measures such as e.g. additional income subsidies and investment promotion were introduced. Besides, special laws that concerned privatization and reorganization of state owned areas were adopted: the Agricultural Adjustment Law (*Landwirtschaftsanpassungsgesetz*) and the State Agency Act (*Treuhandgesetz*). This special legal frame has had a decisive impact on the development of the East German rental market. About 80 % of the utilized agricultural land (which was not state-owned) was retransferred debt-free to the formal private owners. Areas of the former agricultural producers' co-operatives that were distributed to their former members were highly indebted however, and the legal successor had to take over old credit debts amounting on average to 1200 DM per hectare¹³. Although the old debts were mostly released or their redemption was financed through additional capital services, capital scarcity remained the central problem of the East German farming¹⁴. Thus, leasing of agricultural areas was the only affordable way to carry out an agricultural activity. Since the distribution

¹² Cp. DOLL, H., KLARE, K. (2000), p. 190.

¹³ Cp. FOSTNER, B., ISERMAYER, F. (1998), pp. 161-190.

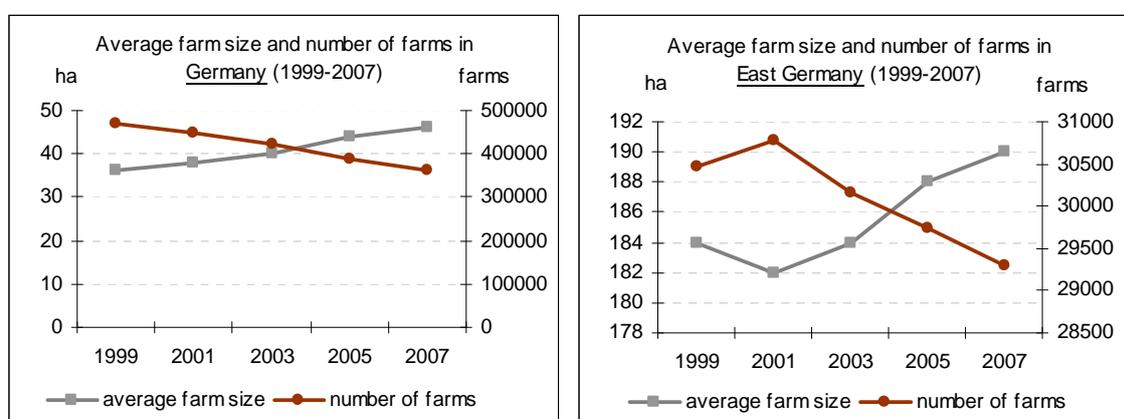
¹⁴ Cp. DOLL, H., KLARE, K. (2000), p. 192.

of areas was regulated by state agencies and not by market forces, there was no noticeable demand-stimulated increase of rental prices. In face of enormous financial support in the past (e.g. direct farm subsidies of 5.2 billion DM or 1000 DM per hectare only in 1990-1991¹⁵) and the current high dynamic of the East agriculture, its expected adjustment has not occurred.

8.4.2 The role of large-scale farms

Over the time period 1990-2007, the number of farms in Germany has dropped from over 630,000 to 360,000. At the same time, the number of people employed in the agriculture has halved from 1,138,000 to 560,000. This downward tendency was accompanied by the rise in the average farm size of 28.6 ha in 1990 to 46.1 ha in 2007. In 2007, the farm size averaged 1.2 ha more than in the previous year. Historical trend also approves a positive relationship between average farm size and the level of economic development, measured by GDP per capita. In the last 5 years, the number of farms decreased by 14 %, the average farm size grew by 14 %, while GDP per capita rose by 13.5 %.

Figure 8: Trends in average farm size and number of farms in Germany and in its East regions



Source: STATISTISCHES BUNDESAMT, 2007.

The growth in farm size varies significantly across the regions. By the end of 2007, the average farm size was 39.2 hectares in West Germany and 188 hectares in East Germany. In the East German regions, where large-scale cooperative farms used to be the predominant farming type, the path of land market development still reflects the social, political, and structural conditions set in the former GDR. Despite many changes and adjustments taken through the common national agricultural policy, large-scale farming still continues to be a prevalent form not only of corporate but also of family-run farms. Farms in East Germany have been managing the largest areas not only nationwide but even within the EU 25. In 2007, the average farm size in East Germany amounted to 188 ha (in Mecklenburg-Western Pomerania it was 250 ha), while nationwide farm size averaged 46 ha.

For the most part, large-scale farming can be explained as a "heritage" of the corporate state farms and ownership structures. In 1989 82.2 % (or 5,075,000 ha) of utilized agricultural areas were managed by state-run agricultural co-operatives (so-called LPG)¹⁶. The average farm size of a total of 3,844 LPG existing at that time farms amounted to 1,390 hectares¹⁷. But structures and scales inherited from the large state farms are certainly not the only reason for large-scale farming.

The most decisive factor was the land price. In 1991, sales and rental prices were up to 80 % and 70 % below the respective West German average figure. Being attracted by the relatively

¹⁵ Cp. DOLL, H., KLARE, K. (2000), p. 191.

¹⁶ Cp. German Government Report on German Reunification *Bericht der Bundesregierung zur Deutschen Einheit, Drucksache 12/6854*, p. 139, 511.

¹⁷ Ibid.

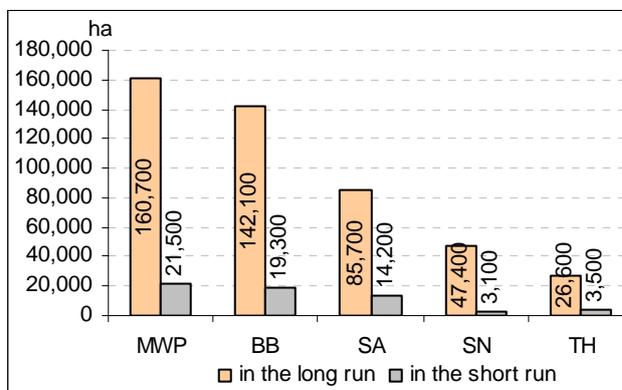
low rents and sales prices of agricultural land, many farmers from the Netherlands and West Germany adopted already existing consolidated enterprises in the East Germany in the last 15 years, particularly in Mecklenburg-Western Pomerania, Saxony-Anhalt, and Brandenburg¹⁸. The additional supply of agricultural areas caused by the high fluctuation of rural population kept down land prices, which in turn advanced the establishment of new large-scale farms. This continued to keep land prices at a low level. Since the areas were less fragmented¹⁹ than in the West regions, the number of landlords per rented areas was low. This fact was favorable to large-scale farming as well. An inverse impact of farm size (which also implies a degree of land fragmentation) on land value was approved neither by statistics nor by qualitative data.

These facts, supported by recent statistics, suggest that large-scale farms will continue to dominate agricultural landscapes in the East Germany, at least in the middle run.

8.4.3 BVVG as determinants of land value in the East Germany

An important specific of the land market in the East Germany is the state trust holding BVVG (Bodenverwertungs- und -verwaltungs GmbH) as an additional actor. BVVG is an exclusive state run trust initiated in 1992, after the German Reunification, to manage and privatize 1.4 million hectares of the former nationally-owned agricultural land areas in East Germany. By the end of 2007, nearly the half of those land areas has been privatized through reassignment or sales to private persons or corporate bodies. With the current volume of 909,000 hectares of agricultural land, the BVVG is still the biggest land owner in the New Laender. Land areas rented by 2008 represented 524,100 ha; 415,100 ha (or 79 %) of them were rented within long-term agreements. Average rents for existing contracts accounted 127 €/ha. Rents for newly rented 33,320 hectares rose by 33 % (from 124 to €186/ha) against 2006. As an intermediate step toward the final privatization the **long-term rental** contracts between BVVG and tenants act stabilizing on land market in East Germany.

Figure 9: Areas let for rent within the long and short term contracts by the end of 2007



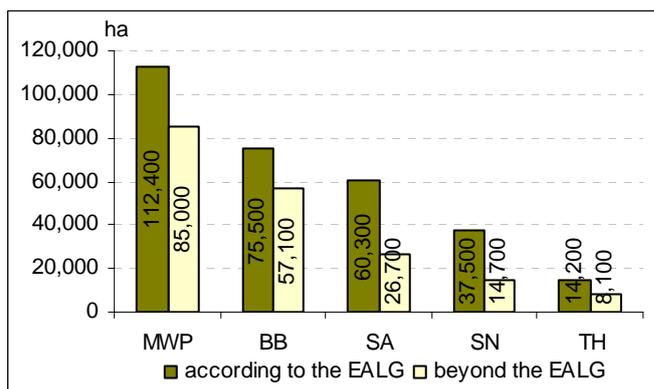
Source: BVVG, 2008.

By the end of 2007, 61 % of the privatized land was sold at **reduced price** (65 % of the current market value) as a result of the Compensation and Indemnity Act (EALG)²⁰, which has kept land prices in the East German regions at the relatively low level. At the same time the BVVG intensified the use of invitation bids as its key instrument, which caused an average rise in market prices by 22 % (ranging from 42 % in Saxony-Anhalt to 4 % in Thuringia) in 2006-2007. Since expiring rental contracts can not be renewed, it creates an additional compulsion to buy as much land as possible to be able to continue farming activities.

¹⁸ Cp. the magazine *Sonderheft der Zeitschrift Neue Landwirtschaft: Bodenmarkt* (2), 2006/2007, p.6.

¹⁹ That is especially distinct in Mecklenburg-Western Pomerania due to low population density.

²⁰ German: *Entschädigungs- und Ausgleichsleistungsgesetz*.

Figure 10: Areas sold by the BVVG by the end of 2007

Source: BVVG, 2008.

Taking into account long-term rental contracts, the BVVG currently has about 600,000 ha of agricultural land in its possession. It is estimated that 42 % (250.000 ha) of this land will be needed for sales at reduced prices according to the Compensation and Indemnity Act. The respective buyer's options are bound to long-term rental contracts, and therefore will end with the expiry date of those contracts, which is between 2010 and 2014. Remaining land areas (approx. 350,000 ha) will be sold at market value, but not exceeding 25,000 ha annually. That means that the privatization of land managed the BVVG, and therewith its direct influence on land market, will last until 2020.

9 DRIVERS OF LAND VALUES

Land value is generally determined by political, economical, historical, structural, and natural conditions. From the economic point of view, the value of land is determined by the demand/supply ratio. In addition, it is highly dependent on the land profitability in a given area. The profitability in turn depends largely on the soil quality. As to demonstrate the complexity of land value drivers and the interdependencies among them, a few important factors are mentioned below:

- Agricultural policies: (Areas payments, price support, production limits (quotas), coupled entitlements, input payments);
- Tax policies (income tax, property tax, inheritance tax, capital gains);
- Regulatory measures: (Purchase and sales of agricultural land; cross compliance, price regulation).

As the main interest of this study is to provide an *empirical* analysis of land market against the background of the recent agricultural policy, this section focuses on the drivers of land value that were expected to influence land prices and rents in the last five years.

Expert interviews conducted in the case study regions showed that many factors, which are theoretically assumed to be decisive for land sales prices and rents, have no or no significant impact on land value. According to the interviews, **infrastructural expansion** (e.g. due to building of highways, airports etc.) entailed only a weak increase in sales prices and rents. The impact of the current **tax policy**, **interest rate** and **inflation** were assessed as unchanged high in the last 17 years. This implies that the SPS implementation did not intensify their impact on land value. **Urban pressure** caused by population growth – thought evidently associated with progressive land shortage – had no impact at all. The same conclusion was reached in regard to the impact of **market regulation**, **rural development policies**, **informal institutions**, **coupled and other subsidies**. All respondents stated explicitly that the change in the impact of the above-mentioned land value drivers in the last 5 years is not discernible at the moment.

9.1 Agricultural commodity prices

Statistical data show that prices for agricultural commodities first continued to fall since 1991 to 2005 and then rose significantly because of the soaring world-wide demand for agricultural commodities. According to the expert surveys, the actual increases in commodity prices primarily led to an additional increase in the rental prices. In the long term historical view however, trends in land rents diverge from commodity prices. This fact is mostly due to big number of the existing long term contracts which do not reflect recent price development. The effect of agricultural commodity prices on land prices was assessed as positive but very weak.

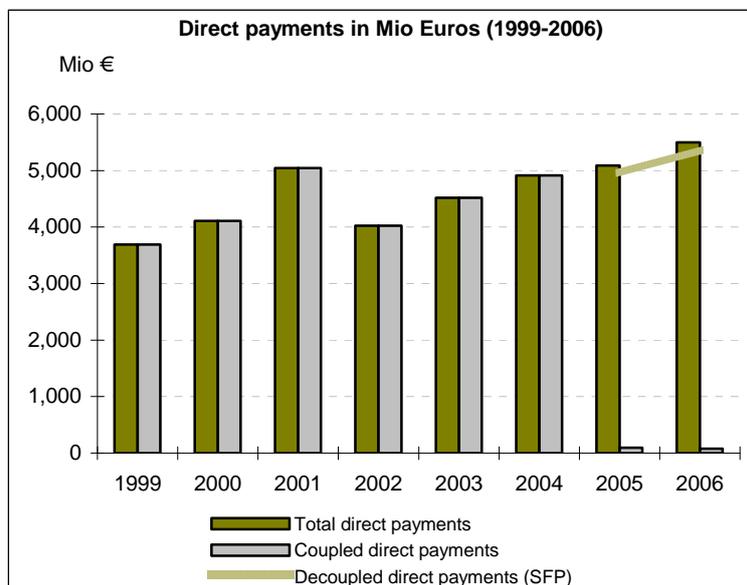
9.2 Agricultural productivity

The interviewed experts also stated that changes in agricultural productivity have a stronger impact on sales market prices than on rental market prices. Compared to the impact of commodity prices, growth in agricultural productivity was estimated as having much stronger impact on land prices.

9.3 Decoupled direct payments

As a new support mechanism decoupled payment are intended to break the links between the amounts paid to farmers, their level of production, and market prices. In 2007, €5,687,259 thousand were transferred as decoupled direct payments to eligible producers. The average value of distributed entitlements (ca. 17 million) accounted for €335 per entitlement or €303 per hectare of eligible land. The average price of transferred entitlements was €425. Only 22 % all 1,006,000 transferred entitlements were traded within market transactions. The total amount of direct payments received by farmers in the period of 1999-2006 is displayed in the Figure 11.

Figure 11: Direct payments to farmers (1999-2006)



Source: BMLEV, 2008.

This change towards a market orientation gave rise to land value expressed primarily in increasing rentals. Nearly 1/3 of the interviewed experts supported this conclusion. However, the effect of decoupled payments on rental prices for grassland and arable land is not the same. Statistical data show a significant increase of the average rental price per hectare for grassland by €4 from 2005 to 2007, while they remained stable at a level of €121/ha from 2001 to 2005. This increase is due to fact that there were no direct payments for grassland before 2005. The average rental price for arable land increased by €6/ha in the period of 2005-2007, which is

less than the average two-years growth values for the period of 2003-2005. A further reason for the recent upward trend of rental prices that resulted from expert surveys is that the rents are more determined by the market factors than by regulatory measures.

According to the expert surveys, land sales prices are not affected by decoupling. One explanation might be that for land purchase decisions long-term developments (such as hedging against economic risks or speculative aspects) are more important than the value of direct payments. In addition, it is also expected that the rising need for building land will entail the shortage of agricultural land and therewith an additional rise in demand for eligible land. Given this projected surplus of entitlement, farmers with more payment entitlements than eligible land, will be willing to pay higher rents or sales prices in order to activate their entitlements²¹. This precondition for activation of entitlements is expected to keep the land prices at a high level.

9.4 Coupled and other payments

Germany decided to decouple all direct payments completely except the one for tobacco and hop²². Being so, there are almost no coupled payments which can influence land values. Less favored area payments, environmental payments have no impact on land values as experts stated.

9.5 Farm size

As Figure 8 shows, the nationwide trend in decrease of the number of farms is accompanied by the increase of the average farm size. The influence of the farm size on sales prices and rents differs across the regions. In Bavaria and Saxony land sales prices are not correlated with the farm size. In Weser Ems the farm size development entails a weak increase of land sales prices. However, this statement only applies to grassland, while the in livestock intensive farming no correlation between land price development and farm size could be observed.

In regard to rental market, a weak increase in rents in conjunction with the farm size was stated in all case study regions. This positive correlation applies to arable land, grassland, and livestock holding.

9.6 Bio-energy

The impact of the advanced bio-energy production on land sales prices and rents was assessed as strong in West Germany but as very small in East Germany. This disparity is mostly due to the different average farm size in the West and East regions. Biogas producers in East Germany assured the needed amount of substrate by renting or buying large size land and/or by closing supply contracts with farmers. In contrast, West German bio-energy producers are forced to rent or buy additional land, which makes them influential actors on the land market.

The interim conclusion that can be drawn from these facts is that the changes in any influencing factors are anticipated in a long-term adaption. However, there are many other factors and regional characteristics which currently have an impact on land value and therefore deserve closer attention.

9.7 Other factors

9.7.1 Soil quality

Soil quality, as measured by soil type, has a direct influence on the productivity of farmland, and consequently, is an important determinant of farmland prices. Since the soil conditions required for production of food crops may be different from those required for other species, they are imbedded in farmer's decision on what, and to which extent, should be produced on the land. In turn, soil productivity is affected by farming intensity. Due to historical land use and the

²¹ At present, entitlements allotted to farmers tend to exceed the number of eligible hectares. In East Germany, their current surplus is estimated to amount to approx. 1-2%.

²² 25% of the hops payments and 60% of the tobacco payments are still coupled (BMLEV, 2006a).

geographical situation agricultural farms are not always situated in areas where benefits in terms of yield would be high. Despite major changes in land use, the strong linkage between land use and soil type seems to continue.

9.7.2 Competition for areas

There are many non-agricultural aspects of land market that can have a negative or positive impact on this linkage. For instance, the demand for building land is not as contingent upon soil quality as demand for agricultural land (re-designated areas) is, but it leads to land shortage and therewith influences the value of agricultural land. In the last 10 years, average price for square meter of building land almost doubled (from €65 to €120), while the amount of building land sold in this time dropped by 47.5 %²³. This explains the differences in land value in the regions with the different degree of urbanization but nearly the same soil quality²⁴. Another example for the impact derived from non-agricultural sector is the growing competition for agricultural land between food and energy crops producers. While in 2004, energy crops covered 890,000 ha of agricultural land, two years later that number amounted to 1.5 million hectares (+ 40 %). However, this still makes up about only 9 % of the utilized agricultural areas.

9.7.3 Labor force structure

Another significant factor that impacts reservation prices of land buyers/tenants and therewith land value, is the different prevalent employment structure in West and East Germany. This leads to different levels of rental and sales prices in West and East Germany. The average rental price for West Germany is €227/ha and the average sales price around €16,000/ha. Whereas in East Germany farmers pay in average €119 to rent one hectare land and around €4,000 to buy one hectare. In East Germany, vast majority of farms are corporate large-size farms with hired labor forces. For those farms, labor costs of employees are expenses which reduce farm's liquidity. For small individual (family) farms, which are the prevalent farming form in West Germany, entrepreneurial profit and salaries of family members are not expenses but imputed costs. This implies that labor costs do not reduce liquidity of small family farms as it is the case for corporative farms. Consequently, farmers in West Germany have a higher reservation price for land than farmers in East Germany.

10 DISTRIBUTION OF DIRECT PAYMENTS

In 2005 every German farmer was allowed to apply for premium entitlements according to the amount of his eligible area. The value of each entitlement mainly depends on the direct payments a farm received during a fixed reference period or a certain point in time as described above. Thus, the total amount of entitlements allocated to farmers in 2005 amounts to 16.959 million. In 2008 permanent cultures and wine are to receive new entitlements, which will amount to approximately 150,000 new entitlements.

The average nominal value of all in entitlements is €332 in 2007. The standard deviation of the average nominal value between farms ranges from €75 in Sachsen-Anhalt to €180 in Rhineland Palatine. Large differences could be especially observed in regions with pastoral animals due to the impact of the farm specific top-up.

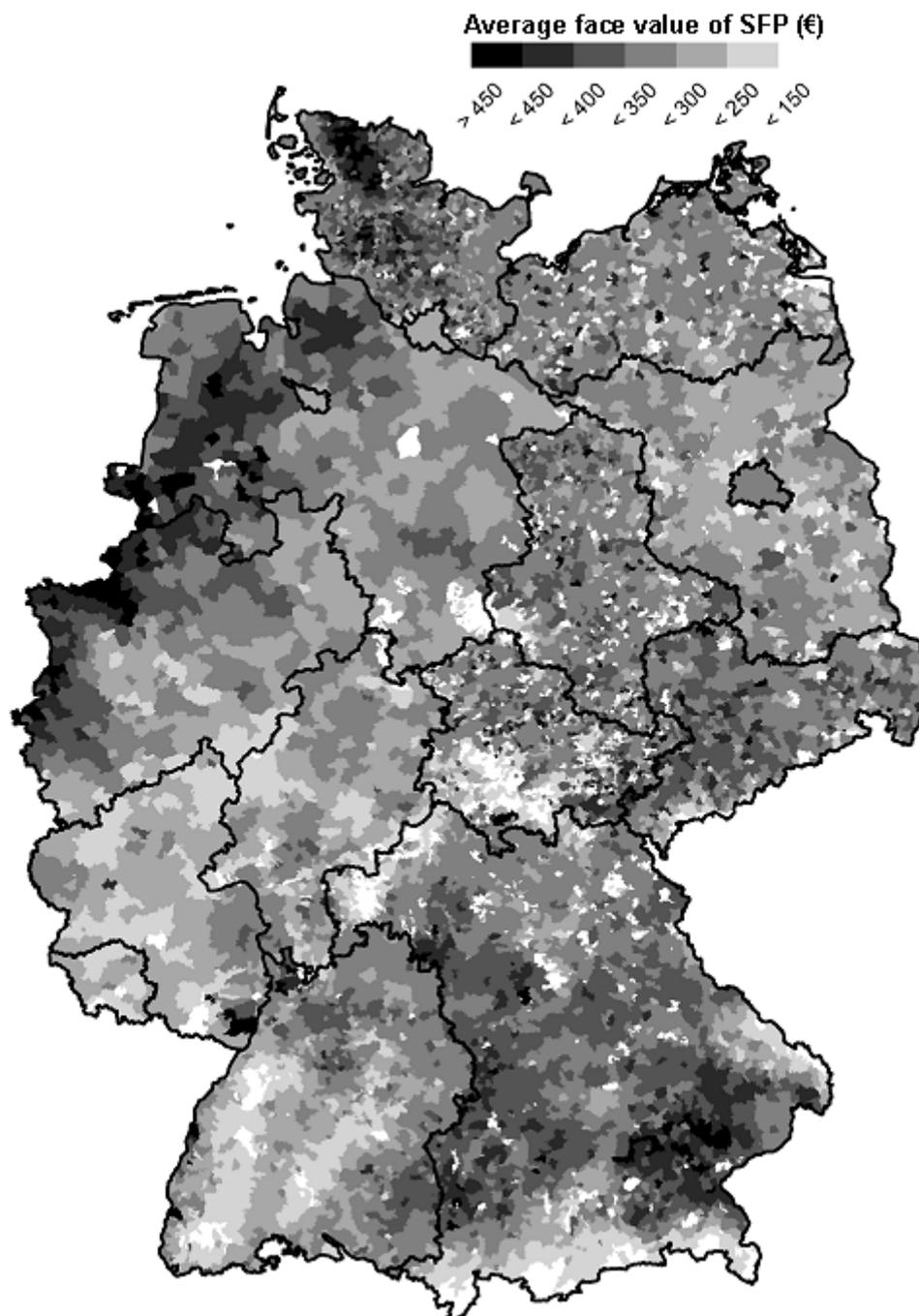
The present average nominal value of entitlements per municipality is €316 countrywide. In 85 % of the municipalities, the average nominal value ranges between €200 and €400. The highest difference between municipalities within one region was observed in Baden Württemberg (BW) and Rhineland-Palatinate (RLP), which showed a standard deviation of €58 and €59, respectively. The narrowest differences were observed in Saarland (SL), Brandenburg and

²³ IFS, 2007.

²⁴ In 2007, average prices for building land amounted to €249/m² in Bavaria, €175/m² in Baden-Württemberg, and €47/m² in Saxony.

Berlin (BB & BL) with €31 standard deviation. Especially in regions with intensive livestock production, the average value of entitlements could vary significantly between farms. The chosen decoupling scheme in Germany actually leads to a heterogeneous distribution of entitlements. In the East Germany, the deviation is smaller than in the West Germany. In Saxony-Anhalt only respectively 10 % of the entitlements belong to farms with an average entitlement below €280 or higher than €390. In North Rhine-Westphalia (NRW) this is true for values below €220 or higher than €510.

Figure 12: Average value of entitlement per municipality



Source: RÖDER and KILIAN, 2008a.

In addition to these initially distributed premium entitlements, further entitlements are distributed from the German National Reserve, which is supplied by four sources:

- The general 1 % reduction of the national ceiling;
- The voluntary return of unused SFP;
- The mandatory return of SFP which were not used in three consecutive years;
- The mandatory return of SFP whose respective face value is derived more than 20 % from the national reserve and which were not used in five consecutive years by the initial holder or his successor.

Farmers who fulfilled one of the following criteria could apply for SFP from the national reserve²⁵ (BMELV, 2004):

- Transfer of a rented farm or rented part of a farm that was rented before 17.05.2005;
- Investments which were made before 15.05.2004;
- Purchase or rent of a farm or part of a farm before 15.05.2004;
- Change of production in the course of abandoning dairy farming before 15.05.2004;
- Special situations in the context of leasing a milk quota.

Funds from the national reserve were only granted if the additional payment exceeded either 5 % of the payment the farmer receives or €500, or if the additional payment exceeded €5,000. The determination whether an SFP is upgraded or not is based on a formally elaborated procedure (e.g. BayStMLF, 2005).

In Germany, hardly any SFP are purely based on the national reserve; more frequently, the face value of the SFP was upgraded. The farmer is required to apply for an upgrade of his SFP by means of the national reserve at the regional office of the agricultural administration. Afterwards, in every Federal State, the application is handled by a central clearing agency.

Granting SFP to new entrants after 2005 is irrelevant. For instance in 2006 and 2007, in Bavaria just 10 farms applied for SFP from the national reserve but only 2 applications were accepted.

10.1 SFP trade in Germany

In principle, it is possible to transfer premium entitlements by sale or any other final assignment (e.g. a donation) with or without land. However, there are some restrictions in the transfer of entitlements:

An SFP can only be activated within the trading region it originates from; there are 13 trading regions (federal states and adjacent city states).

Transfer of an entitlement for the first time is only possible after the vending farm activated at least 80 % of its SFP within one fiscal year or if the vending farm activated below 80 % of its entitlements within one year. A transfer is only possible if the vending farm returns the un-activated entitlements to the national reserve.

Entitlements from the national reserve or entitlements whose face value consists of more than 20 % of the national reserve must not be traded within the first 5 years after endowment. Entitlements transferred through succession are excluded from that rule.

A transfer of premium entitlements through a rental agreement is only possible with the relevant amount of eligible land. This means that the renter has to be owner of the land as well as the premium entitlements.

Every transfer of an entitlement has to be registered and documented in a centrally administered database. In the frame of the integrated administration and control system (IACS) this task is

²⁵ A detailed description of the national reserve could be found in section 0.

fulfilled by the InVeKos database (Zentrale InVeKoS-Datenbank, ZID) in Germany. The database is not the legal base of the transaction and serves for administration and documentation purposes only. However, an unregistered transfer of entitlements is otherwise not possible, i.e., unofficial ("black") market transactions are not feasible. Regarding the transaction itself, it is recorded in the ZID if an entitlement is transferred permanently or a temporarily and whether the transfer is linked to farm succession or not. Unfortunately, this last entry, farm succession, is not equally well maintained by all federal states. Therefore, based on this raw information it is not possible to determine the type of transaction and to draw a distinction between "real" market transactions or transfers through e.g. farm succession. To reveal the motives behind transfers, further information from ZID is used to subdivide all transfers into different categories. Based on RÖDER and KILIAN (2008) these categories are displayed in Table 4.

Table 4: Categories of different motivations for a transfer of entitlements

Category	Motive	Criteria
A	Definite farm succession	Transfers which are <ul style="list-style-type: none"> marked in ZID as farm succession, farm division, farm consolidation or where the farm id changed
B	Probable farm succession	Transfers which are <ul style="list-style-type: none"> not part of A), where the receiving farm does not exist in 2005 where the vending farm no longer existed in 2007 where the vending farm releases more than 90 % of its entitlements to a single farm where the receiving farm receives more than 90 % of its entitlements from a single farm
C	Farm exit	Transfers <ul style="list-style-type: none"> which are not part of A) or B) where the vending farm no longer existed in 2007
D	Shrinking farms	Transfers <ul style="list-style-type: none"> which are not part of A) to C) where the vending farm exits in 2007 where the vending farm releases normal entitlements where the vending farm did not receive entitlements and where the vending farm in 2007 did not hold more than 5 normal entitlements or more than 25 % of its entitlements
E	Exchange of entitlements	Transfers, <ul style="list-style-type: none"> which are not part of A) to D) where the same farm at the same time releases and receives "similar" entitlements, with a difference in face values no greater than €25

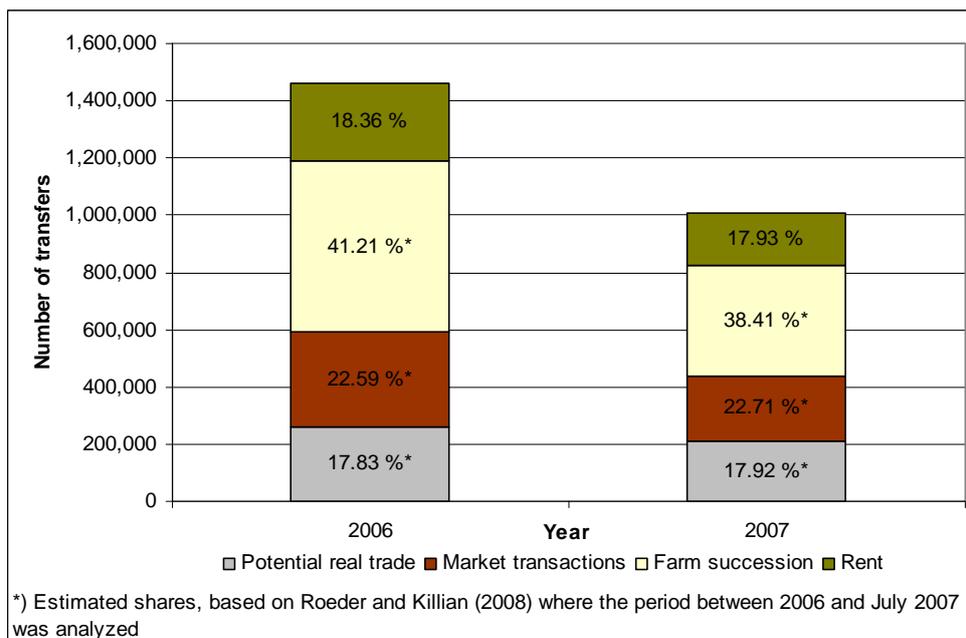
Source: RÖDER and KILIAN, 2008.

Based on the above nomenclature, we derive the number of market transfers as the sum of all final transfers minus categories A) and B). If we want to narrow the group of market transactions to those where the motivation for the transfer lies in the financial value of an entitlement, we furthermore subtract the categories C) to E), resulting in the category "Potential real trade". Accordingly, the trade volumes in 2006 and 2007 are displayed in Figure 13. On the regional level,

the highest potential for "real trade" can be found in the northern regions SH & HH, NS & HB and MVP. In these regions the share of "real trade" is almost twice as high as in the other regions. Obviously the number of market transactions decreased in 2007. One explanation for the decline in market transfers is the reduced incentive that results from set-aside obligations and OGS being abandoned in 2008.

Regarding the flow of trade, one can state that it takes place predominantly on a local level. Analysis of the distance between receiving and delivering farms shows that only in roughly 8 % of all transferred entitlement the two parties are located more than 10 km apart. Consequently, no significant change of the average face value could be observed on the level of municipalities. Regarding the type of entitlements, the analysis shows that the share of trade of set-aside entitlements is higher than that of normal entitlements. In the regions BY, BE & BB the transfer of set-aside entitlements was twice as high as that of normal entitlements. On the regional level, a change in the amount of activated set-aside entitlements could be observed in only eight counties²⁶. The biggest change took place in Vecta County (vending) which is the county with the highest livestock density in Germany and Oldenburg (receiving). Both are located adjacent to each other and are characterized by the highest (Vechta) or very high (Oldenburg) stocking densities. One explanation for the low exchange of set-aside entitlements could be that in regions with very high stocking densities like Lower Saxony this holds for the whole country so there is no complementary region which could gather the set-aside entitlements.

Figure 13: Trade volume of entitlements and motivation of trade



Source: Based on RÖDER and KILIAN (2008) and own calculations.

In the ZID the market price of transferred entitlements is not recorded, i.e., there is no central institution which records the market prices of entitlements. We therefore have to rely on survey results. Kilian and Salhofer (2008) show that the degree to which entitlements are capitalised into land values is highly dependent on the implemented decoupling scheme, as well as the ratio of the number of entitlements and the amount of eligible area. In the case of an excess supply of entitlements, payments are not, or are only to a very low extent, capitalised into land values, and the reservation price is zero or reflects the transaction costs. In the case of excess demand, prices go up to the net present value of an entitlement. As shown above, we assume an excess of entitlements for Germany, which would result in a market price much below the net present value of an entitlement. However, according to KILIAN and SAALHOFER (2008), in the case of a historical or hybrid decoupling scheme (as in Germany) it is likely there is an exchange of

²⁶ This means that the share of set aside entitlements changed more than 0.25% (see RÖDER and KILIAN, 2008).

entitlements with different face values. To obtain information on the market values of entitlements, RÖDER and KILIAN (2008) conducted an expert survey on the trade of entitlements among 101 experts throughout Germany. This survey was supplemented by expert surveys in the case study regions of the present study.

Table 5: Market value of traded entitlements

Region	Amount of traded entitlements	Multiplier for the market value
SH	11	1.5
NS & HB	21	1.3
NRW	7	1.3
HE	6	1.3
RLP	1	1.0
BY	54	1.4
SN	3	1.8
Sum	103	

Source: RÖDER and KILIAN (2008) and own survey.

According to the survey, the market value is predominantly between 1 and 1.5 times the face value of an entitlement. This is much lower than the net present value of an entitlement. Regarding regional variation, the survey shows that there is very low regional variation in general, whereas market value is a little bit higher in Eastern Germany compared to Western Germany. A survey could confirm the tendency of the findings also for Baden-Württemberg, Berlin, Brandenburg and Mecklenburg-Western Pomerania (RÖDER and KILIAN, 2008b).

10.2 Redistribution of payments till 2013

At the beginning of the reform, the redistribution of payments between different farm types was very low because of the way the hybrid model was implemented. Starting from 2010, the hybrid model will be stepwise transferred into a pure regional model. Thus, for 2009 a regional target value is calculated (c.f. Table 1). Furthermore, in 2009 the difference from the regional target value is calculated for every premium entitlement. This difference could be either positive or negative and is then stepwise reduced according to the scheme displayed in Table 6 until it reaches the regional target value.

Table 6: Stepwise introduction of regional model

Year	2009	2010	2011	2012	2013
Difference between value in 2009 and regional target value	100 %	90 %	70 %	40 %	0 %

Source: BMELV, 2005.

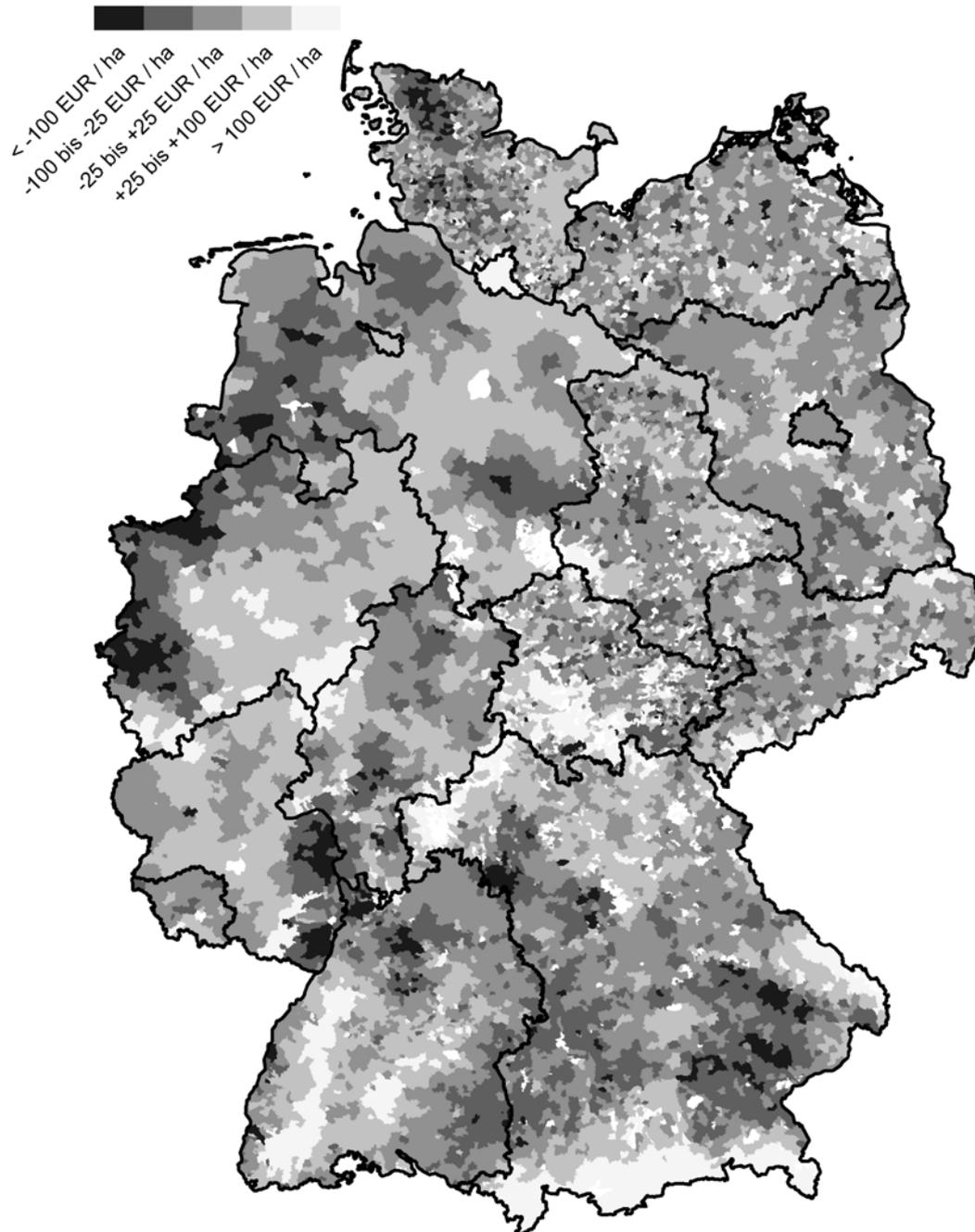
The way the SFP is already implemented allows us to draw some conclusions on the "winners" and "losers" of the reform, at least in a comparative static sense. With the transfer to regional model intensive dairy farms with a high share of arable forage cropping must accept very high losses regarding the amount of received payments. Because of the milk premium, they receive entitlements with an in tendency high face value, which even increases during the first years of the reform. However, in the long run the farm-specific top-ups are redistributed to *all* farms with grazing land and even to arable farms. The same argumentation applies for intensive bull fattening farms. Only if the farms have a high share of permanent pasture land the losses regarding the top-ups partly compensated through the strong increase in payments for permanent pasture. In the "winning" group of farms we find mainly crop farms with a broad crop rotation containing sugar beets and potatoes. Furthermore, farms which

gain from redistribution are farms which operate on grazing land with a stock of cattle or sheep below the average, very extensive cattle farms, horse farms and extensive hobby farms.

To illustrate the regional redistribution in Figure 14, the differences between the regional target values and the distribution of payment entitlements after implementation of the reform are displayed.

In Figure 14 we show that the rise of the average value of an entitlement is highest in the Alp regions and in the low mountain range (more than €100). The highest losses can be observed in the more favoured areas. These are mainly areas with a mixed production structure characterised by intensive crop production on fertile soils and intensive dairy farms. This confirms the principal thought on the redistribution shown above.

Figure 14: Regional redistribution of payments between 2005 and 2013

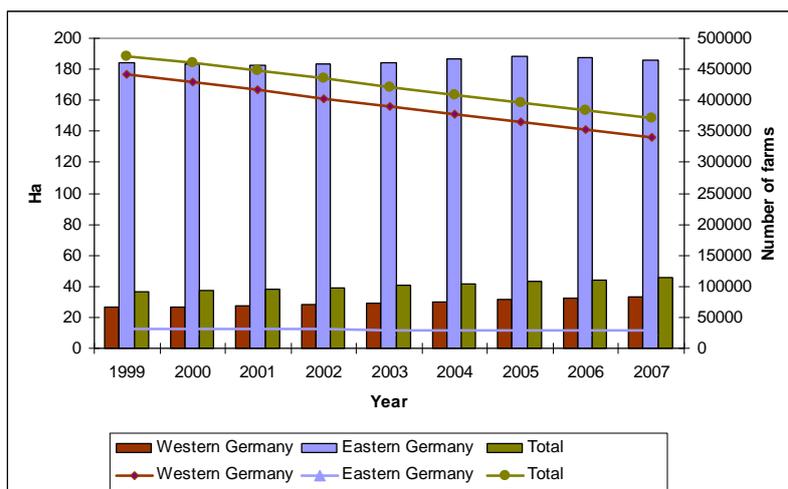


Source: RÖDER and KILIAN, 2008.

11 EFFECTS ON STRUCTURAL CHANGE

In the following section the effect of SPS on some key indicators of structural change are discussed. In Figure 15 the development of average farms sizes and number of farms is displayed. Since the introduction of SPS no change in the general trend could be observed. This holds in equal measures for the characteristic structures in Eastern and Western Germany. It can be assumed that farm growth and the farm entry/exit rate is not affected from the introduction of the SPS. This finding is confirmed by the results of the expert survey. Regarding farm growth, interviewed experts state that the average impact of the SPS is small. The same applies for farm entry/exit decisions. Experts state that if there is an effect of SPS on entry rate, the effect is very small. It is conceivable that the introduction of the SPS leads to a higher exit rate in all study regions.

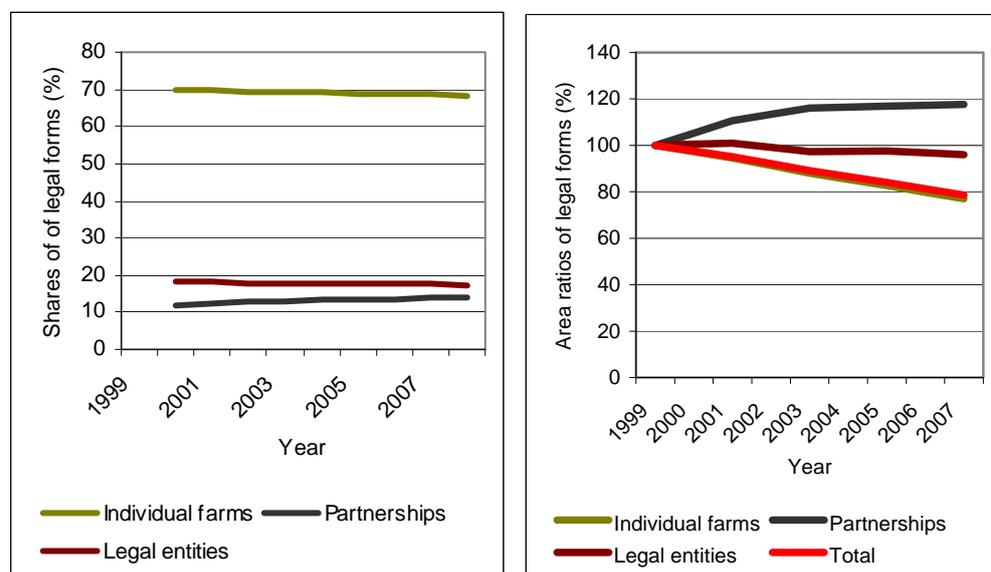
Figure 15: Development of average farm sizes and number of farms



Source: Own illustration based on STATISTISCHES JAHRBUCH für E. L. F. (1999-2007).

Regarding the effect of SPS on the legal form of farms we can observe a similar picture. In Figure 16 the development of the area ratios and the percentage change of the number of farms according to the different legal forms are displayed. As an overall trend we can observe an increase of partnerships both in terms of area share and number. This increase is at the expense of individual farms and legal entities. The restructuring between legal entities and individual farms is especially characteristic of Eastern Germany and still plays a role, though to a much lower extent.

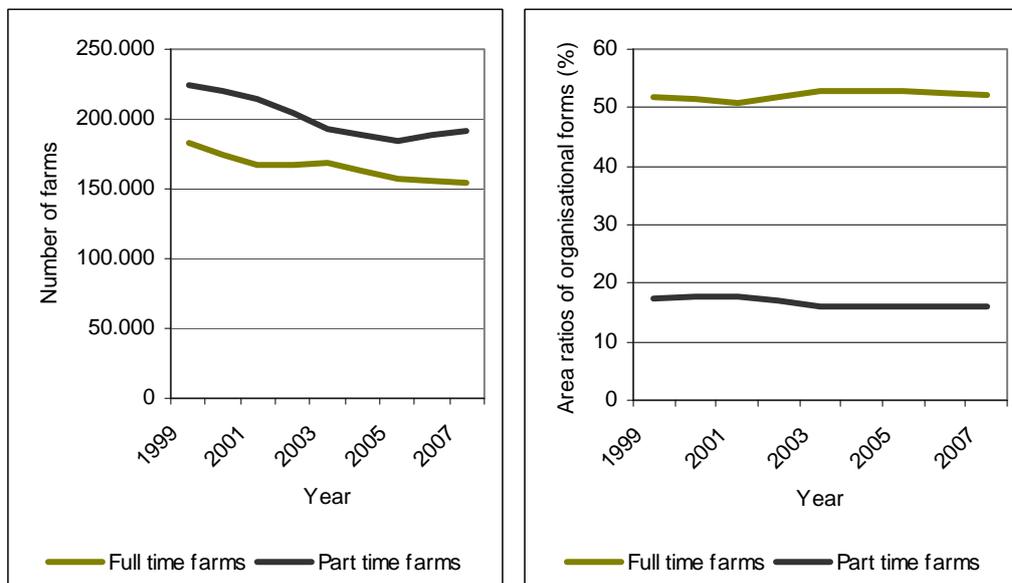
Figure 16: Development of area ratio of legal forms and percentage change of number of farms according to legal form



Source: Own illustration based on STATISTISCHES JAHRBUCH für E. L. F. (1999-2007).

While the introduction of SPS has minute effects on the legal form, it has more of an impact on the decision of whether a farm is operated full- or part-time. The development of organisational forms and area shares of full-time and part-time farms are displayed in Figure 17. Since 2005 a significant increase in the number of part-time farms can be observed. For an explanation of this increase two groups of farms could be relevant. The first possibility is that small businesses or hobby farms which did not apply for CAP payments before the introduction of SPS began to operate as part-time farms to facilitate applying for SFP. The second group could be full-time farms who extended their land use to the minimum requirements and thus probably switched to part-time farms. Because the area share stays constant or is even decreasing, the first line of reasoning seems to be more likely. This result is confirmed by the expert surveys in the case study regions. Of the 28 experts interviewed, 7 stated that the introduction of SPS has a positive impact on operating part-time farms. This number is larger than the number of experts who have the opposite opinion.

Figure 17: Development of organisational forms and area ratios of organisational forms

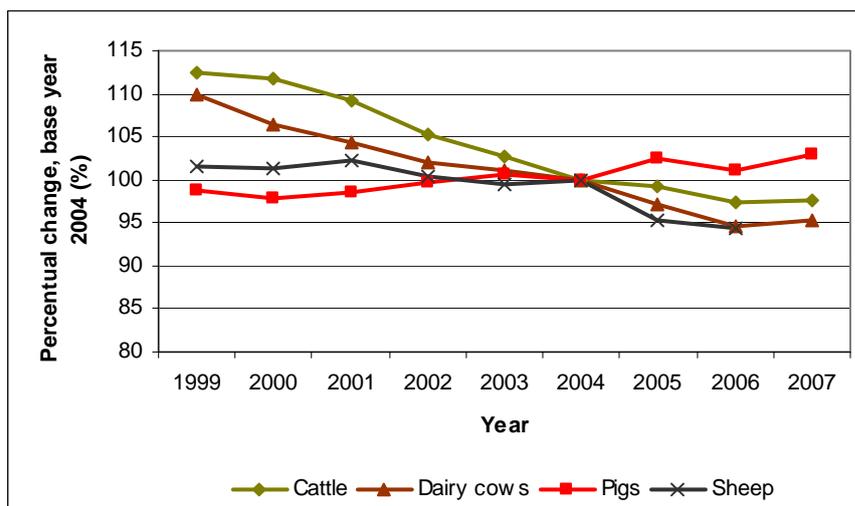


Source: Own illustration based on STATISTISCHES JAHRBUCH für E. L. F. (1999-2007).

In the next paragraph we discuss the effects of SPS on production structure. As we would expect in a comparative static sense, the effect on arable farms is low. The only exceptions are regions with a high share of starch potatoes. This is also confirmed by the expert opinions in all three case study regions. For this reason we subsequently focus on animal production.

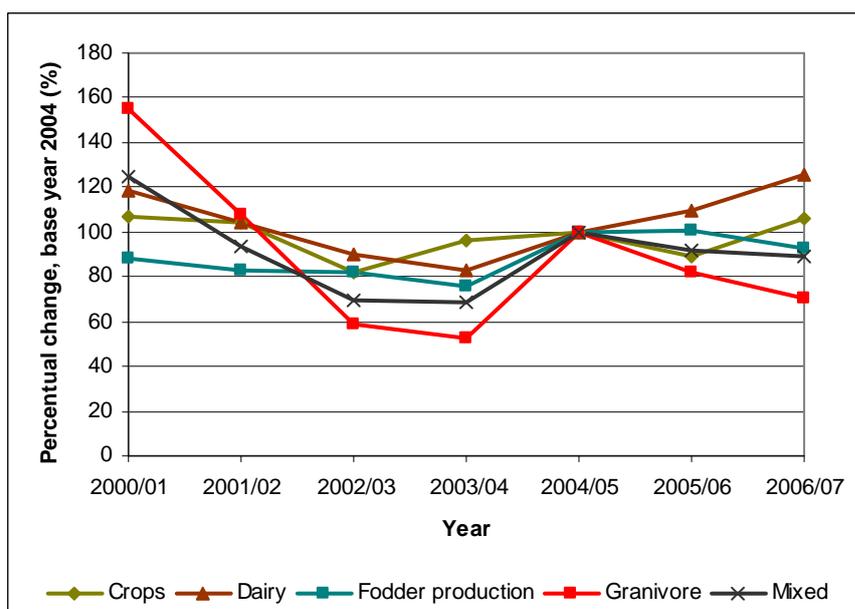
In Figure 17 the percentage change in the production structure relative to the base year 2004 is displayed. At first glance one could observe a decrease in the group of ruminants since the introduction of SPS. However, at least for cattle and dairy, this reflects the general trend and would mean that SPS did not exacerbate the decrease as one would expect because of the redistribution of payments away from intensive dairy and cattle farms (already at the beginning of the reform). The situation seems to be different for sheep production, where the level of production stays relatively constant between 1999 and 2004, when production decreased about 5 % after the introduction of SPS.

To interpret the results we must also consider the characteristics of the *dynamic* hybrid model, which entails only a small redistribution of payments at the beginning but a strong redistribution at the end of the reform. In between we have a period where the farms are able to stepwise adjust to the situation. Accordingly, although we could not observe an effect on the aggregate level, regional experts judge the situation slightly different. In all regions the highest impact was observed for bull fattening, suckler cow and sheep farming depending on the extent of the region's production.

Figure 18: Relative development of production structure

Source: Own illustration based on STATISTISCHES JAHRBUCH für E. L. F. (1999-2007).

In order to judge the production structure's development since introducing SPS, farm profits have to be considered. In Figure 19 the relative development of farm profits according to farm type is displayed. Here we can observe that dairy farms could increase their profits the most. This is caused by the strong increase in milk prices since 2005. This increase is in contrast to most projections, which assumed decreasing milk prices due to milk market reforms. With increased milk prices farms are able to compensate the distributional effects of SPS. As the price level was very low in 2004, most projections assumed that already small losses for dairy farms would lead to significant effects as there is almost no space for farms to adapt. Results from expert interviews showed that SPS has little impact on farm income. Experts stated that there are no or slightly positive effects on arable farms. On dairy farms the estimated effect depends on whether the farm operates with a high share of natural grazing land. In the latter case, income effects are estimated positively, otherwise at zero or slightly negative.

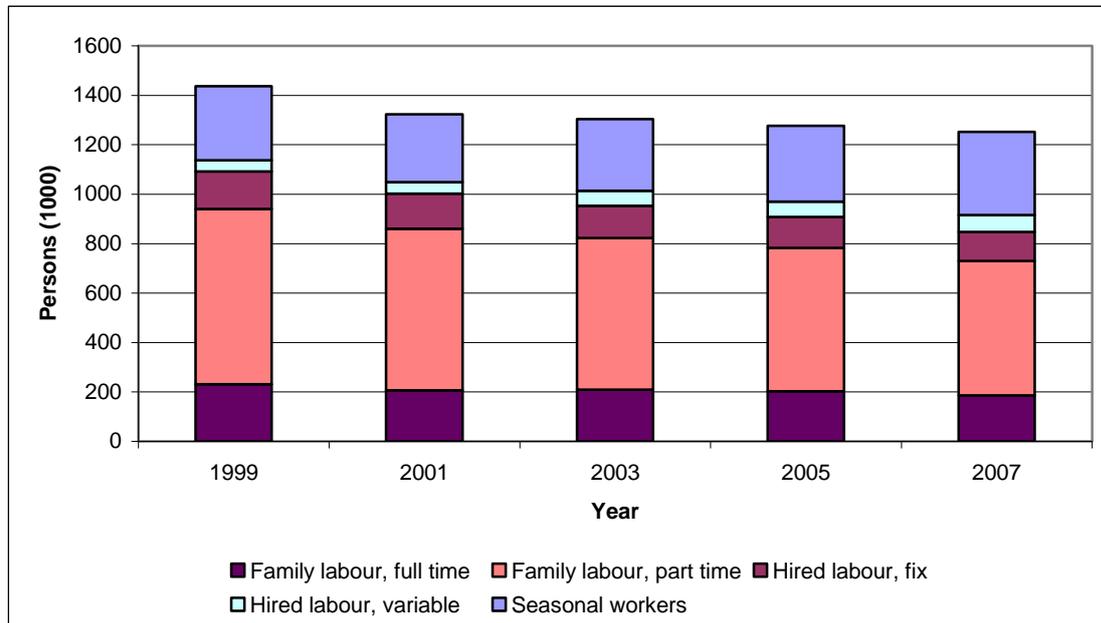
Figure 19: Percentage development of farm profits according to the production structure

Source: Own illustration based on STATISTISCHES JAHRBUCH für E. L. F. (1999-2007).

Regarding employment in agriculture, almost 90 % of the interviewed experts stated that the introduction of SPS has no effect. Only one of the interviewed experts in Saxony said that the

SPS has a weak negative impact on the labour employment. On an aggregate level this could be confirmed by the data. In Figure 20 the development of labour forces in agriculture is displayed. Obviously there is no break since the introduction of SPS; instead the general trend of a reduction of labour forces in agriculture is prolonged.

Figure 20: Development of labour forces in agriculture



Source: Own illustration based on STATISTISCHES JAHRBUCH für E. L. F. (1999-2007).

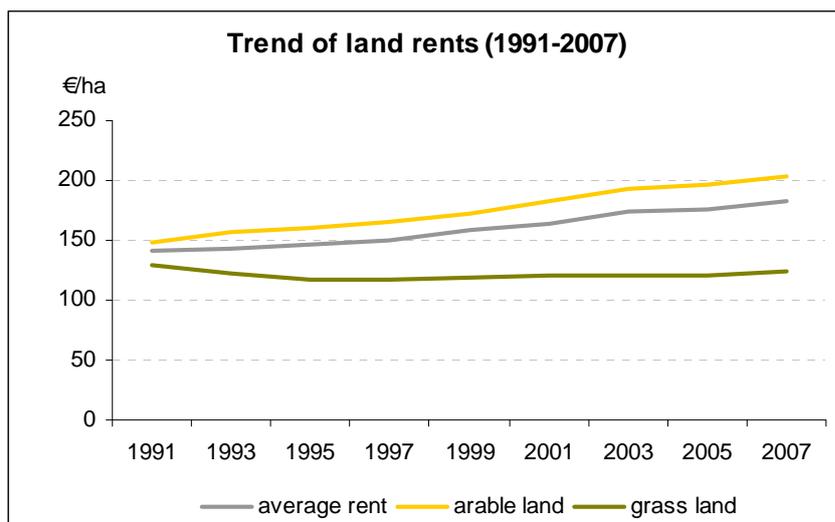
Besides the discussion of these general indicators, we carried out a qualitative analysis on a number of other relevant issues regarding the current and future effect of the reform. As agricultural production is very capital-intensive, we asked if the introduction of SPS affected credit constrains and the use of payment entitlements as collateral. On average, the SPS has slightly positive effects on credit access in all regions, while 70 % (19 of 27) of those questioned answered that there are no effects. In Germany it is common practice to use the direct payments a farm receives as collateral for short-term credits. This practice has not changed after the reform, though it is quite uncommon to use the net present value of an entitlement as collateral, as one would perhaps expect. One interviewed expert in Saxony even responded that the SPS might have negative effects on creditworthiness, since due to CC-controls payments are more risky.

12 EFFECTS OF CHANGES IN SFP ON LAND VALUES

Along with "financial discipline" – the rules which provide for automatic subsidy cuts in order to prevent total spending on the CAP exceeding pre-set budget ceilings – the CAP assigns a gradual reduction in SFP (known as "modulation") during the period of 2005-2012. Available funds deducted at source by modulation will be transferred over to rural development budgets²⁷. Modulation of payments is 3 % in 2005, 4 % in 2006, and 5 % in 2007-2012. The first €5,000 of direct payments received by claimants are exempt from modulation.

Central point of interest of this section is to investigate the effects of changes in SFP on land value. For this purpose, trends of per hectare land values measured in land sales prices and land rents are useful to identify any changes in land value since the implementation of SFP in 2005.

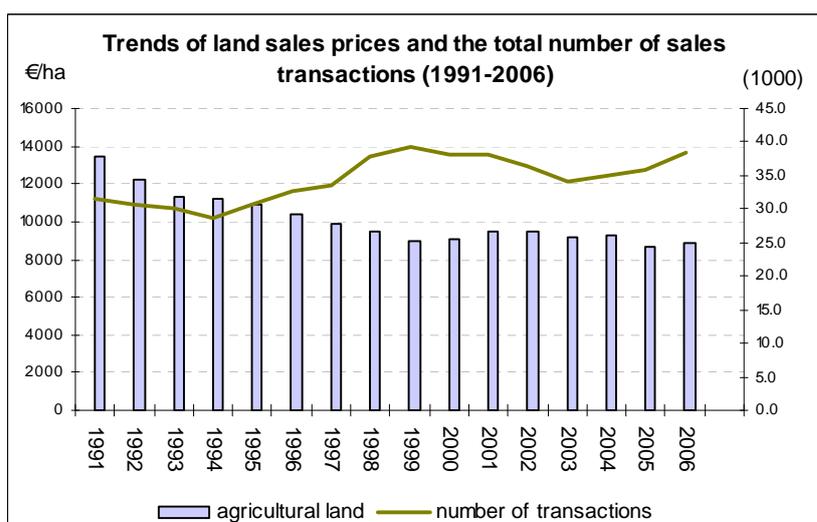
²⁷ Modulated receipts will be collected by the EC and redistributed to member states on a criteria basis. Germany is guaranteed to get back a minimum of 90% of modulated funds.

Figure 21: Trend of land rents (1991-2007)

Source: STATISTISCHES BUNDESAMT, 2007.

The positive trend of average rents for agricultural land is mostly determined by increasing rents for arable land. In the time from 1991 to 2007, rents for arable land continued to rise, while for grassland the upward trend started from 1999. Since 2003, these positive trends of rents for arable and grassland flattened. Since the implementation of SFP in 2005, no change in the general trend could be observed. Based on this development of land rents, the correlation between the changes in SFP and land rents is not evident. For the most part, this is due to the long-term rental contract (with an average duration of 10-12 years). In regard to the newly closed rental contracts however, experts questioned in interviews estimated that rents for newly rented areas are significantly higher than average rents for the currently existing rental contracts. Although these qualitative data suggest that expectations for rent rise have been raised, there is still no evidence for any effect of changes in SFP on current or expected land value.

Historical and recent development of the land sales market also supports this conclusion.

Figure 22: Trends in land sales prices and the total number of sales transactions (1991-2006)

Source: STATISTISCHES BUNDESAMT, 2007.

The figure above shows that in a long term view, trend of land sales prices is negative. The slight upward price development from 2000 to 2004 flattened again in the last three years. For 2007 it is estimated that farmland prices continue to pause. The total number of land sales transactions demonstrates an inverse trend as compared to the development of land prices in

the last 17 years. At the same time, this trend shows a rising demand for agricultural land starting from 2003.

Based on the statistical trends, it could be concluded that land value, in terms of land sales prices and land rents, is not affected by changes in SFP. Qualitative assessments, collected by expert surveys, suggest that the implementation of the SFP initially resulted in uncertainty on the land market, but did not entail any discernible effect on land value. However, experts also emphasized that the impact of changes in SFP could be neither isolated nor estimated at the moment.

13 GENERAL CONCLUSION

The agricultural reform of 2003 is designed to encourage farmers to adjust their production to market needs and to promote more sustainable farming practices. These aims should be achieved by decoupling of direct payments from production and by farmers' compliance with environmental practices as a precondition for claiming direct payments. In this regard, the present empirical study produced the following conclusions and recommendations.

The effect of the introduction of SPS on land values is estimated as being very low. As there is a shortage of eligible area in relation to premium entitlements, land values should remain constant in relation to the market values for premium entitlements. In line with this argumentation, and due to the introduction of entitlements for natural grassland, an increase of rental prices for grassland could be observed in 2007.

The structural composition of agricultural sector was not affected by changes in the agricultural policy. The upward trend in average farm size is expected to continue, but it cannot be traced back to the influences of the agricultural policy.

Regarding the distributional effects of SPS, only in regions with extensively used natural grassland do farmers benefit from decoupled payments. Conversely, decoupled payments are rather disadvantageous for regions with intensive dairy or cattle production with a low share of natural grassland.

Based on the statistical trends and qualitative data, it can be concluded that land value, in terms of land sales prices and land rents, is not affected by changes in SFP.

Despite some new trends in development of land prices and rents, the total net impact of the CAP reform on land value is not clear at the moment.

No significant influence on land value can also be stated with regard to cross compliance measures. According to the expert surveys, new policy conditions are still not sufficiently communicated to farmers. Thus, the tools used by the farm advisory system must be more adjusted to the information need of farmers.

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- STATISTISCHES BUNDESAMT b: Kaufwerte für landwirtschaftliche Grundstücke. Fachserie 3, Reihe 2.4. several years.
- STATISTISCHES BUNDESAMT c: Eigentums- und Pachtverhältnisse Agrarstrukturerhebung 2005. Fachserie 3, Reihe 2.1.6. several years.
- STATISTISCHES BUNDESAMT 2005: Spezial query from agricultural census (Agrarstrukturerhebung).

STATISTISCHES JAHRBUCH FÜR ERNÄHRUNG LANDWIRTSCHAFT UND FORSTEN (ed.): Bundesministerium für Ernährung Landwirtschaft und Verbraucherschutz, Landwirtschaftsverlag, Münster-Hiltrup, several years.

STATISTISCHES LANDESAMT SACHSEN: Landwirtschaftliche Betriebe in Sachsen nach Größenklassen der LF (in ha) ab 1991. Statistisches Landesamt des Freistaates Sachsen. April 2008. <www.statistik.sachsen.de/21/10_05/10_05_01_tabelle.asp>.

ZID (2005): Zentrale InVeKoS Datenbank special query.

APPENDIX**A.1. REGIONAL REPORT BAVARIA****Executive summary**

The case study region of South East Upper Bavaria has been chosen as a representative area of Southern Germany. One-third of all farms in Germany are located in Bavaria, about 5 % of which is located in the case study region. Based on the natural conditions, a high share of these farms specializes in dairy farming. The livestock density in South East Upper Bavaria is presently an average of 1.44 LU/ha.

The SPS was originally implemented as a dynamic hybrid payment scheme in all of Germany and has since changed to a regional payment scheme. The estimate average value of Bavaria payment entitlements will be €340/ha, just at the average for the rest of the country.

The agricultural land regulations are comparable throughout all of Germany. West Germany typically has a relatively small market for land rent and sales, Bavaria having the lowest market of all federal states. Furthermore, in the study region, both the average land price and the average land rent are high. From 1999 to 2005, the land rent market in the study region was characterized by increasing prices and increasing rent share. The prices in the land sales market have since remained relatively stable.

Policies such as decoupling and rural development have had a relatively small influence on the land market. More important factors to the land rental and sales markets are the levels of the present agricultural commodity prices and the agricultural productivity of the plot.

With decoupling, a share of the livestock payments was redistributed over the grasslands. The remaining livestock payments were added to the payment entitlements to farms which received the payments previous to the decoupling. Payment entitlements in Bavaria for 2007 totalled €150 million; the average face value for whole Bavaria is €334/ha (ZID).

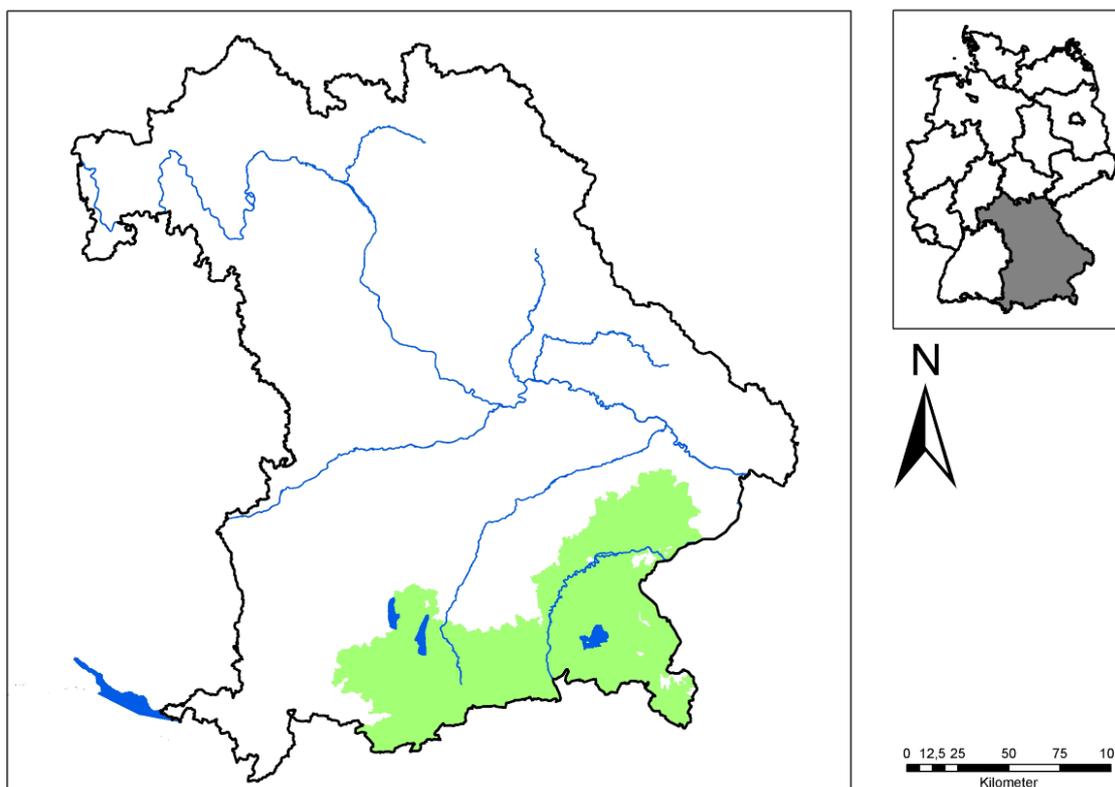
During the last few years, the structural changes in Bavaria have accelerated. However, as per interviews with various experts, decoupling was not a factor in any of these recent changes in South East Upper Bavaria. Furthermore these experts report that there is no observable influence of the SFP on land values until recently.

A.1.1. Introduction

We have chosen a region in the south of the federal state of Bavaria called "South East Upper Bavaria" to serve as a representative region for Southern Germany (see Figure 23).

The utilized agricultural area (UAA) of South East Upper Bavaria in 2003 was 457,457 ha, 39 % of which is arable land and 61 % grassland.

Figure 23: South East Upper Bavaria in the federal state of Bavaria



Source: Own illustration.

There are in total 21,374 farms in this region, with an average farm size of 21 ha/farm. This is just under the average farm size for the Federal State of Bavaria, which is 26 ha/farm (ASE, 2003) and Western Germany (34 ha/farm). The average farm size in East Germany is ten times larger than that in South East Upper Bavaria (SITUATIONSBERICHT, 2008). Hence, only 10 % of all farms are larger than 42 ha (see Table 7), with these large farms accounting for 32 % of the agriculturally-used land in this region. The size of these farms fall between 13 ha to 42 ha (49 % of all farms), and account for 55 % of the land in this area. The remaining 41 % of farms are less than 13 ha in size, and account for 13 % of the land (ASE, 2003). The predominant farm type in Bavaria is the individual farm, with only 3 % of all farms (which account for 8 % of the land) being legal entities (BAYERISCHER AGRARBERICHT, 2006). The share of part time farming in the whole of Bavaria is about 55 %. In the region of South East Upper Bavaria, this share increases from about 40 % in the north, to over 60 % in the mountain areas in the south (BAYERISCHER AGRARBERICHT, 2006).

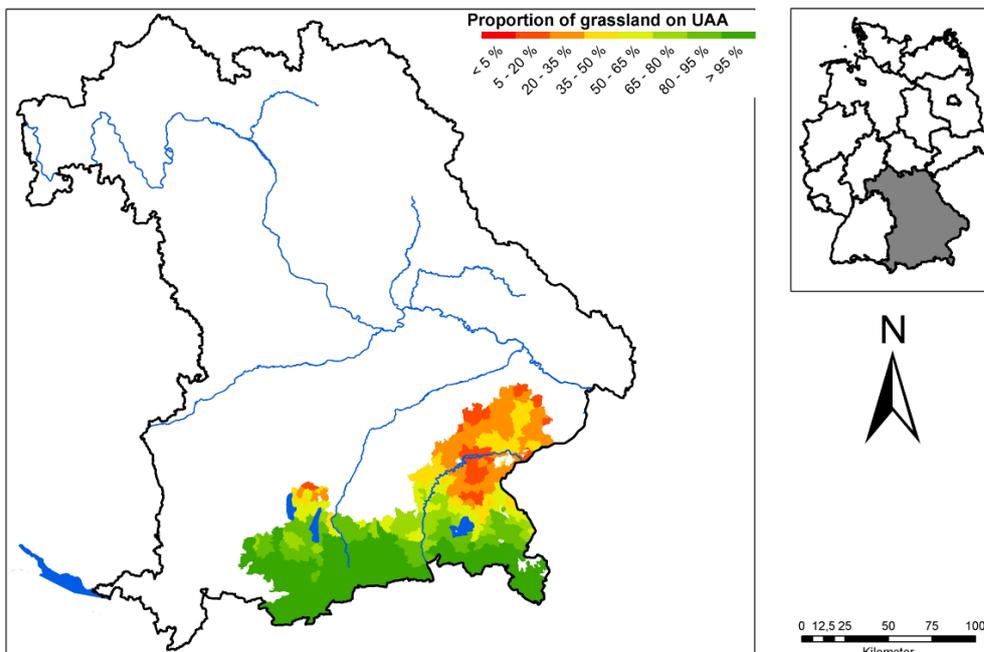
Table 7: Number of farms in different size classes in South East Upper Bavaria (total number and respectively used UAA)

Size class	N° of farms	Share of farms (%)	UAA (ha)	UAA (%)
< 4 ha	2,677	13	7,471	2
4-13 ha	6,015	28	49,667	11
13-24 ha	5,247	25	95,429	21
24-42 ha	5,051	24	159,009	35
42-75 ha	2,024	9	107,565	24
75- 133 ha	311	1	28,525	6
> 133 ha	49	0	9,791	2
<i>Total</i>	<i>21,374</i>	<i>100</i>	<i>457,457</i>	<i>100</i>

Source: ASE, 2003.

Compared to East Germany, Western Germany has a relatively low percentage of rented land. In 2005, only 44.6 % of the agricultural land in Bavaria was rented (SITUATIONSBERICHT , 2008), this being the lowest rent-share for all federal states of Germany. In the case study region of South East Upper Bavaria, only 33.8 % of the UAA is rented (ASE, 2005).

The natural conditions in South East Upper Bavaria are less favourable for agriculture than in other parts of Germany. With the exception of a small area in the north-eastern part of the study area, the majority of the study regions are classified as less favourable (central and northern part) or even as mountain areas (southern part). The share of permanent grassland increases from 30 % in the northeast to nearly 100 % in the southern alpine upland and mountain areas (see Figure 23).

Figure 24: Proportion of grassland on UAA in South East Upper Bavaria

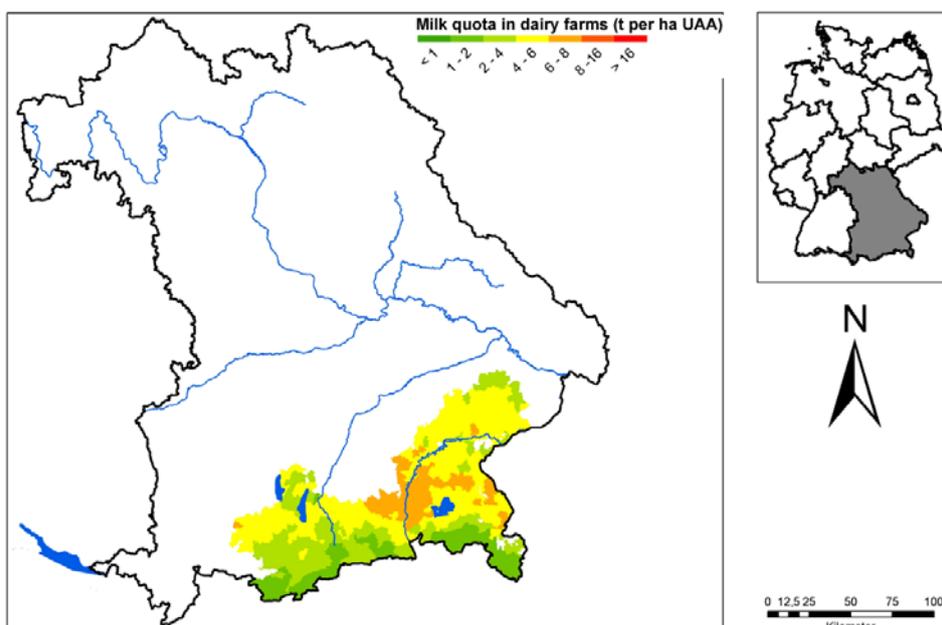
Source: Own illustration, ASE, 2003.

Bavaria is in a transient climate region with a continental climate increasing from northwest to southeast. The rainfall varies from approximately 500 mm per year in the north of Bavaria to 2000 mm per year in the mountain area in the south. In the north of the case study region, there is about 850 mm of rainfall per year. In the mountain regions, the rainfall adds up to nearly

2000 mm per year due to the relief rainfall of the Alps. The average annual temperature is regional, ranging from 6°C to 10°C (LFU, 2008).

These natural conditions lead to a high share of farms specializing in cattle, especially dairy farming. In 2004, more than 27 % of milk production in Germany was produced in Bavaria (BAYERISCHER AGRARBERICHT, 2006). There is a high density of milk production in the central areas of South East Upper Bavaria, with up to 8 t milk quota/ha UAA (see Figure 25).

Figure 25: Milk quota in dairy farms in South East Upper Bavaria



Source: Own illustration, ASE, 2003.

Therefore, it is no surprise that 83 % of UAA in South East Upper Bavaria is used for permanent grassland and fodder cropping for the farm-type grazing livestock. Other farm types are less important in the case study region. The livestock density in South East Upper Bavaria is presently an average of 1.44 livestock units per ha (Table 8). This value is a result of high-density areas of intense milk production and lower densities in the mountain regions. Notable is the relatively high-density level (2.26 livestock units per ha) in the granivore farm type. This results from a few specialised poultry and pig farms, which are able to run their business independent of land.

Table 8: Type of farming in South East Upper Bavaria (number of farms, land use and percentage shares)

Farm type	N° of farms	Share of farms (%)	UAA (ha)	UAA (%)	Ø - size (ha)	LU	LU (%)	LU per ha UAA
Field crop	1,636	8	32,720	7	20	4,150	1	0.13
Grazing livestock (incl. dairy)	17,697	83	380,329	83	21	601,244	91	1.58
Granivore	170	1	3,793	1	22	8,568	1	2.26
Mixed	1,507	7	39,799	9	26	45,161	7	1.13
Others	364	2	816	0	2	321	0	0.39
<i>Total</i>	<i>21,374</i>	<i>100</i>	<i>457,457</i>	<i>100</i>	<i>21</i>	<i>659,445</i>	<i>100</i>	<i>1.44</i>

Source: ASE, 2003.

A.1.2. Implementation of SPS

A dynamic hybrid payment scheme was introduced within Germany, wherein payment entitlements consist of a regional specific and a farm specific part. The regional specific entitlements are divided into grassland and arable land entitlements. However, it is possible to establish a grassland entitlement with a hectare of arable land and vice versa. In Bavaria, grassland payment entitlements are valued at €89/ha and arable payment entitlements at €299/ha. The farm specific payment is added to these values, thus, the value of payment entitlements differs, depending on the production and structure of the individual farms. These differences should be reduced gradually starting from 2010 until 2013. In 2013, the payment for each hectare should be the same. Another characteristic of the German decoupling model is the differentiation of the regional payments between the federal states. The actual values of the payments for arable and grassland vary among the federal states, as will the final regional payment in 2013. The final regional payment for 2013 will be calculated based on the total amount of payments and the total number of payment entitlements in the federal states in 2009. It is estimated that in the federal states of Saxony, North Rhine-Westphalia and Schleswig-Holstein, payments per hectare will be the highest with €359/ha. In the federal state of Saarland, they will be the lowest with €258/ha. The average value for both Germany and the federal state of Bavaria will be €340/ha (SITUATIONSBERICHT, 2008). For further details concerning the payment scheme can be found in the main report for Germany.

A.1.3. Agricultural land regulations

Agricultural land regulations are the same throughout Germany. However, the procedural regulations of the main legal bodies of German land law in Bavaria are in part less strict compared to other federal states (e.g. the minimum size for a permit of a land sale in the procedural regulations of *Grundstücksverkehrsgesetz* is 2 ha in the federal State Bavaria, compared to 1 ha in Lower Saxony and 0.5 ha in the federal state of Saxony). For further details concerning the agricultural land regulations can be found in the main report for Germany.

A.1.4. Land market developments

The main characteristic of the land market in Bavaria, as well as the land market of Western Germany, is the small number of transactions in comparison to Eastern Germany. In 2006, only 5,569 ha UAA were sold in Bavaria, which equates to 0.16 % of the total UAA in Bavaria. This is the lowest share of sales of all of the federal states in Germany. For 2006, the average share of sales equalled 0.31 % in Western Germany and 0.94 % in Eastern Germany (STATISTISCHES BUNDESAMT, 2006). Another characteristic is the high level of the land price. In 2006, the land price was €24,294/ha, the second highest value of all federal states. The average plot size remains static at approximately 1.5 ha.

In summary, the land sales market is narrow. The land price has remained relatively stable even though the area and the number of transactions decreased over the last years (see Table 9). Further information concerning the sales market in Germany in general can be found in the main report for Germany.

Table 9: Land sales market in the Federal State Bavaria 1999-2006

	2000	2001	2002	2003	2004	2005	2006	Growth rate 2000-2006 (%)
Land price (€/ha)	24,619	24,307	24,941	22,848	22,550	22,326	24,294	- 1.3
Transacted land (ha)	7,143	6,620	6,036	5,076	4,989	4,708	5,569	- 22.0
Number of transactions	4,973	4,367	4,081	3,514	3,407	3,128	3,764	- 24.3
Plot size (ha)	1.44	1.52	1.48	1.44	1.46	1.51	1.48	+ 2.7
Share of sales (%)	0.20	0.19	0.17	0.14	0.14	0.13	0.16	- 20.0

Source: STATISTISCHES BUNDESAMT, 1999-2006, own calculations.

In comparison, the share of rented land of the total UAA in Bavaria is one of lowest of all federal states. In 2005, about 83,100 farms rented 1,455,400 ha UAA, which equates to 44.6 % of the total UAA. Full-time farming is used for 40.2 % of the rented area, with only 25 % of the rented area used for part time farming and 52 % of the rented area for legal entities. The rent share in the case study region South East Upper Bavaria is at the low level of 33.9 %. The rent share rose from 35.7 % in 1999, up to the present value of 44.6 % (BAYERISCHER AGRARBERICHT, 2006) in the federal state of Bavaria, and from 28.9 % up to 33.9 % in the case study region. The land rent for new rented areas increased from €260/ha up to €275/ha during this period (see Table 10).

Table 10: Average rental price of new rented land and share of rented land in South East Upper Bavaria

	1999	2001	2003	2005	Growth rate 1999-2005 (%)
Average new rental price for total UAA (€/ha)	260	273	272	275	+ 5.7
Average new rental price for arable land (€/ha)	331	346	357	347	+ 4.8
Average new rental price for grassland (€/ha)	217	184	163	181	- 16.5
Share of rented land, total (%)	28.9	29.5	32.5	33.9	+ 17.3

Source: ASE 1999, 2001, 2003, 2005, own calculations.

In summary, from 1999 to 2005, the land rent market in the case study region is characterized by increasing prices (growth rate 6 %) and increasing rent share (growth rate 17 %).

The Bavarian land market's small volume can be attributed to the prevalence of individual family farms that has developed in this area. The farmers are concerned with traditional values and one of their main aims is to maintain family property. Because of this, they prefer to run their farm part time, even if it is not the most profitable way to use their labour force, instead of renting or selling the land. If they quit the farm business, they will usually rent out their land, but they will not sell it. For further information concerning the rental market in Germany in general can be found in the main report for Germany.

A.1.5. Drivers of land values

According to various experts, land sales prices in South East Upper Bavaria are influenced by market forces rather than by policies like decoupling, rural development and other measures. The critical factors for the land prices are the level of the present agricultural commodity prices and the agricultural productivity of the plot. Irrelevant to the land price are the size of the farm, the development of the city population, and informal institutions.

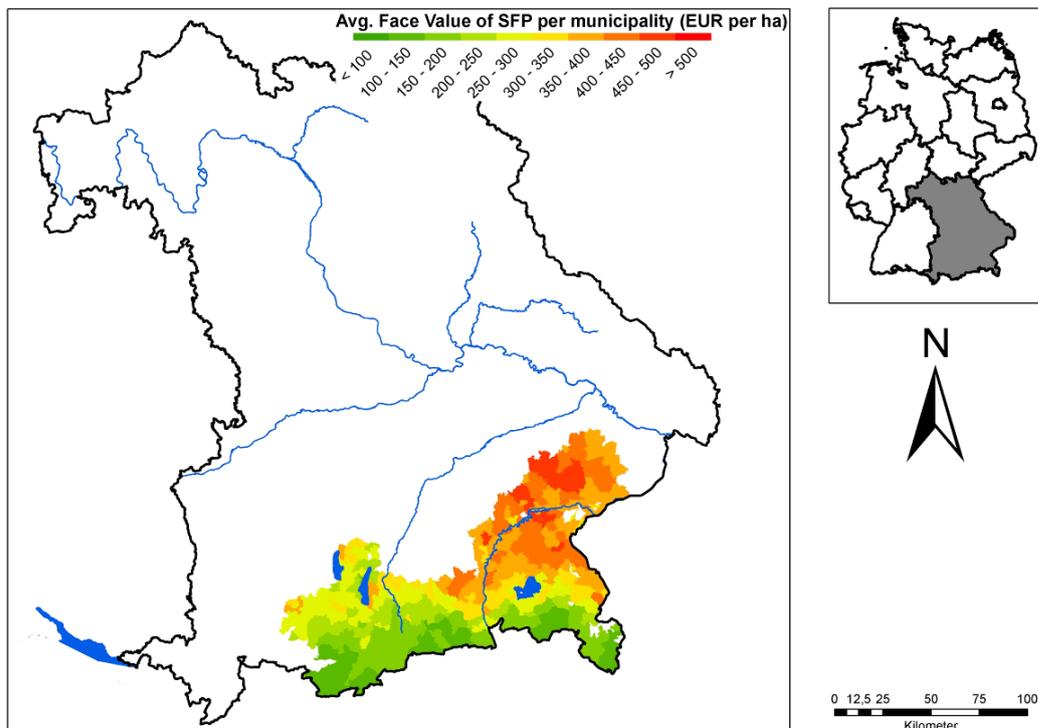
In Bavaria, the current land demand for land to be used for the production of bio energy is a strong driving force of the land price. Other important factors to land prices are income taxes and value-added taxes. The income taxes and value-added taxes have a larger influence in Bavaria than in Saxony and Weser-Ems; the population growth in the region has resulted in a moderate impact on the land prices. As mentioned previously, the Law on the Sale of Agricultural Land (*Grundstücksverkehrsgesetz*) is as restrictive in Bavaria in comparison to other federal. The aim of this law is to support the agricultural structures, making it possible to prohibit land sales to non-agricultural investors. However, some experts believe that this law anticipates land sales to non-agricultural investors beforehand; hence it has not only a regulative but a preventive effect on the land sales market.

A steady price increase can be observed within the rental market in Bavaria (see Table 10). Experts state that in the long-run, increases in agricultural productivity influence rental prices. However, the actual increases in commodity prices led and continue to lead to additional increases in the rental prices. It is generally believed that decoupling will only influence the rental prices for marginal grassland (especially in the mountain pastures), if at all. Here, rents may increase since very few of these areas received 1st pillar payments prior to decoupling and the introduced payments will continue to increase from €89/ha to €340/ha until 2013 (SITUATIONSBERICHT, 2008). Other policy measures like environmental or less favourable area payments have no impact on rental prices. The same holds for taxes, the development of interests, and informal institutions. Furthermore, there are only a few infrastructure projects in the South East Upper Bavaria. These projects only influence local rental or sales prices. Further information concerning the drivers of land values in general can be found in the main report for Germany.

A.1.6. Distribution of direct payments

With decoupling, a share of livestock payments was redistributed to the grasslands in Bavaria. The remaining livestock payments were added to the payment entitlements of the farms which previously received the payments. Therefore, because of the different payments for arable land (€299/ha) and grassland (€89/ha), the average value per payment entitlement varies among municipalities, between €89/ha to more than €500/ha. In 2007, payment entitlements in Bavaria totalled €150 million; the average value for all of Bavaria is €334/ha (ZID). In municipalities in the northern regions of the case study area, the value of payment entitlements is the highest (see Figure 26). These regions are dominated by fodder cropping farms with dairy cows and beef fattening.

Figure 26: Average face value of SFP per municipality in South East Upper Bavaria



Source: Own illustration, ASE 2003.

From 2009 until 2013, the differences in payment values will gradually be adjusted and it is estimated that the final regional payment for Bavaria will be €340/ha (SITUATIONSBERICHT, 2008). For further information concerning the distribution of direct payments in general, we refer the reader to the main report for Germany.

A.1.7. Effects on structural change

In comparison to other federal states, the level of structural change in Bavaria is relatively low. Since 1965, there has been an average yearly decrease of 1.6 % in the number of farms in Bavaria. From 1995 to 2005, 25.9 % of farms closed. It is notable that in South East Upper Bavaria there is a difference in the percentage of farms that ended, from about 11.5 % in the mountain regions in the south up to about 22 % in the northwest. Furthermore, the rate of structural change has increased in recent years. Between 2001 and 2003, on average 3.5 % of farms shut down in Bavaria (BAYERISCHER AGRARBERICHT, 2006).

Experts believe that there have been no recent structural changes in South East Upper Bavaria due to decoupling, but rather from other factors, such as the generational change in the farming family. In the future, it is possible that the structural change in marginal grassland regions (e.g. mountain pasture) will be decelerated due to the increasing entitlement payments in these regions.

For further information concerning the structural change in general, we refer the reader to the main report for Germany.

A.1.8. Effects of changes in SFP on land values

Experts believe that until now, there has been no observable influence of the SFP on land values, or if there is an influence, it is very small in comparison to other factors (e.g. change in commodity prices).

For further information concerning the in general, we refer the reader to the main report for Germany.

A.1.9. Conclusions

The land market of Bavaria is steady with an increase of volume on the land rental market, whereas the land sale market showed a slight decrease. Experts believe that changes in policies had no or little influence on the land market. The factors of the land market include the present level of agricultural commodity price, the agricultural productivity of the plot and in regions of South East Upper Bavaria where intensive livestock farming is very important the stock limitations according to the Nitrates Directive.

A.2. REGIONAL REPORT LOWER SAXONY

Executive summary

The Weser Ems region of Lower Saxony has been chosen as a representative region of West Germany. In this region 53.2 % of the 25,340 farms are run full-time. Based on the natural conditions, a large percentage of farms specialize in livestock farming. The average livestock density in Weser Ems is presently 1.89 livestock units per ha.

Within Germany, the SPS was created as a dynamic hybrid payment and has since changed to a regional payment scheme. The estimate average value for Lower Saxony will be €326/ha, which is just below the average of €340/ha for the rest of the country.

Agricultural land regulations are the same throughout Germany. Unlike in Western Germany, a majority of UAA were sold in Lower Saxony. The average land price in Lower Saxony is €13,170/ha, which is less than the West German average price of €15,941/ha. The rent share in the case study region of Weser Ems is at a low level of 48.3 %. From 1999 to 2005, the land rent market in the study region was characterized by increasing prices and increasing rent share.

Policies like decoupling and rural development have had a relatively small influence on the land market. The most important factors regarding the market for land sales and rentals include the present level of agricultural commodity prices and the agricultural productivity of the plot.

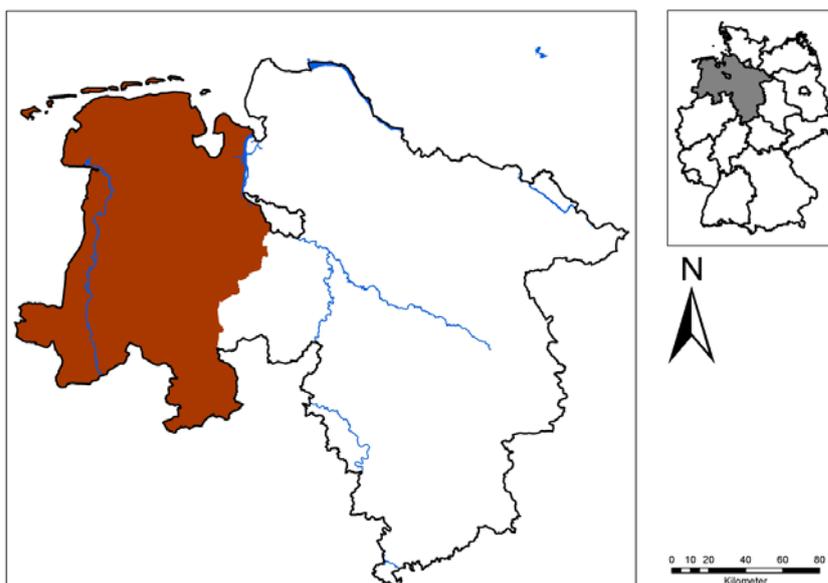
With decoupling, a share of the livestock payments was redistributed to the grasslands of Lower Saxony. The remaining livestock payments were added to the payment entitlements of the farms which received payments before decoupling. The entitlement payments in Lower Saxony for 2007 totalled €354 million; the average face value for all of Lower Saxony is €379/ha (ZID).

During the past two years, structural changes in Lower Saxony have slowed down. Experts have shown that there have been no recent changes regarding structural change in Weser Ems due to decoupling and furthermore have shown that there has been no observable influence of the SFP on land values.

A.2.1. Introduction

We have chosen the northwest region of Lower Saxony, called "Weser Ems" as a representative region for Western Germany (see Figure 27). The utilized agricultural area (UAA) of Weser Ems in 2003 is 929,533 ha of which 65 % is arable land and 35 % grassland.

Figure 27: Lower Saxony with the region Weser Ems



Source: Own illustration.

There is a total of 25,340 farms in this area, with an average farm size of 38 ha/farm, just over the average farm size in Western Germany (34 ha/farm); the average farm size in East Germany is about five times larger than in Weser Ems (Source: SITUATIONSBERICHT, 2008). Only 13 % of all farms are larger than 75 ha (see Table 11). These large farms account for 38 % of the land use in Weser Ems. Most farms are 42 ha up to 75 ha in size (23 % of all farms), and account for 35 % of the utilized agricultural land. The remaining 26 % of farmable land is used by farms smaller than 24 ha; 48 % of all farms in the study region belong to this group (ASE, 2003). Individual farms are predominant in Lower Saxony, with only 6 % of all farms owned by legal entities in 2005, and accounting for 12.1 % of the UAA. Furthermore, 40.6 % of all farms are part time farms, comprising 13.5 % of the UAA. The remaining 68.5 % of UAA are full time farms which account for 53.2 % of all total farms (Die Niedersächsische Landwirtschaft in Zahlen, 2007).

Table 11: Number of farms in different size classes in the former district of Weser Ems (total number and respectively used UAA)

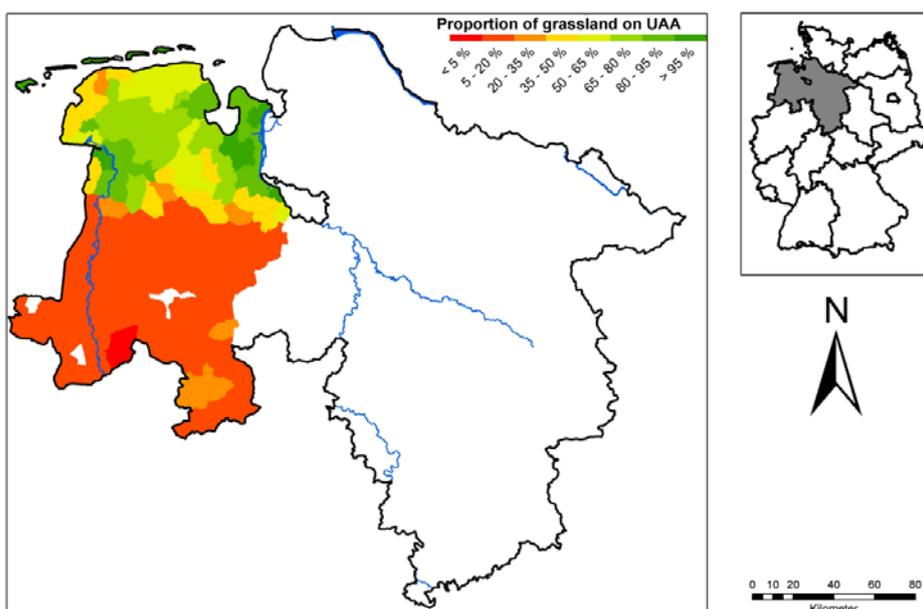
Size class	N° of farms	Share of farms (%)	UAA (ha)	UAA (%)
< 4 ha	4,196	17	9,731	1
4-13 ha	4,615	18	36,836	4
13-24 ha	3,330	13	59,929	6
24-42 ha	4,156	16	138,153	15
42-75 ha	5,813	23	327,189	35
75-133 ha	2,699	11	254,333	27
133-237 ha	458	2	75,294	8
> 237 ha	73	0	28,069	3
<i>Total</i>	<i>25,340</i>	<i>100</i>	<i>929,533</i>	<i>100</i>

Source: ASE, 2003.

Compared to East Germany, the share of rented land is the relatively low in Western Germany. In Lower Saxony in 2005, only 52.7 % of the agricultural land was rented (SITUATIONSBERICHT, 2008), which is the third lowest rent-share for all federal states in Germany. In the case study region of Weser Ems 48.3 % of the UAA is rented (ASE, 2005).

The natural conditions in Weser Ems vary. The share of permanent grassland in the case study region varies from 20 % in the south, to over 90 % in the northern parts of East Friesland (see Figure 28).

Figure 28: Proportion of grassland on UAA in South East Upper Bavaria



Source: Own illustration, ASE 2003.

Lower Saxony is located in the middle European temperate zone. Found in the northwest region, it is affected by the Atlantic climate (small amplitude of temperature and larger rainfall), whereas in the southeast the influence of continental climate increases. The rainfall varies from approximately 550 mm per year in the eastern regions to 1,300 mm per year in the low mountain range in the southeast. The absolute altitude ranges from -2.5 m in East Friesland to 971 m in the Harz region. The average annual temperature varies regionally from 7.5°C to 8.5°C (UMWELT NIEDERSACHSEN, 2008).

These natural conditions lead to a high share of farms specializing in livestock farming (cattle, dairy cows, pigs and poultry). Thus, the majority of the total UAA is classified as the "grazing livestock" (48 %). These farms are primarily located in the grassland regions in the north and in the fodder cropping regions in the central region. In 2005, 17 % of all dairy cows in Germany were located in Lower Saxony (ASE, 2005). Another 31 % of the UAA is listed as a "mixed" farm type.

Table 12: Type of farming in the former district of Weser Ems (number of farms, land use and percentage shares)

Farm type	N° of farms	Share of farms (%)	UAA (ha)	UAA (%)	Ø - size (ha)	LU	LU (%)	LU per ha UAA
Field crop	2,779	11	88,377	10	32	17,475	1	0.20
Grazing livestock (incl. dairy)	11,785	48	446,447	48	38	783,520	45	1.76
Granivore	3,239	13	101,857	11	31	407,982	23	4.01
Mixed	6,527	27	289,200	31	44	541,095	31	1.87
Others	1,010	4	3,651	0	4	1,764	0	0.48
<i>Total</i>	<i>24,330</i>	<i>100</i>	<i>925,882</i>	<i>100</i>	<i>38</i>	<i>1,750,073</i>	<i>100</i>	<i>1.89</i>

Source: ASE, 2003.

Another important farm type in Weser Ems is the "Granivore" farm type. The region Vechta is famous for its high density of pig farming. Hence, it is no surprise that about 30 % of all pigs in Germany are located in Lower Saxony. Furthermore, 35 % of the layer hens, 35 % of fattened ducks, 49 % of fattened turkeys, and 53 % of chickens are produced in Lower Saxony. Field cropping is less important in this case study region. The livestock density in Weser Ems is at an average level of 1.89 livestock units per hectare (see Table 12). This value is due to the extremely intensive pig and poultry production areas and lower densities in the less favoured areas.

A.2.2. Implementation of SPS

A dynamic hybrid payment scheme was introduced in Germany in which payment entitlements consisted of regional specific and farm specific parts. The regional specific entitlements are again differentiated between grassland and arable land entitlements. However, it is possible to establish a grassland entitlement with a hectare of arable land and vice versa. In Lower Saxony, the grassland payment entitlements are valued at €102/ha and arable payment entitlements at €259/ha. The farm specific payment is added to these values, thus, the value of payment entitlements differs, depending on the production and structure of the individual farm. These differences will be gradually reduced, starting in 2010 and continuing into 2013, at which time the payment for each hectare should be the same. A further characteristic of the German decoupling model is the differences of the regional payments between the federal states. The actual values of the payments for arable and grassland vary among the federal states, as will the final regional payments in 2013. This will be calculated based on the total amount of payments and the total number of payment entitlements in the federal states received in 2009. It is estimated that in the federal states of Saxony, North Rhine-Westphalia and Schleswig-Holstein, the payment

per hectare will be the highest, at €359/ha. In the federal state of Saarland, they are expected to be the lowest at €258/ha. The average value for Lower Saxony will be €326/ha, below the expected nationwide average value of €340/ha (SITUATIONSBERICHT, 2008). For further details concerning the payment scheme, we refer the reader to the main report for Germany.

A.2.3. Agricultural land regulations

Agricultural land regulations are the same throughout Germany. However, the procedural regulations of the main legal bodies of German land law vary by federal state (e.g. the minimum size for the need of a permit of a land sale in the procedural regulations of Grundstücksverkehrsgesetz is 1 ha in Lower Saxony compared with strict 0.5 ha in Saxony and less restrictive 2 ha in the federal state Bavaria (DEUTSCHES NOTARINSTITUT, 2008)). For further details concerning the agricultural land regulations, we refer the reader to the main report for Germany.

A.2.4. Land market developments

The main characteristic of the land market in Western Germany is the relatively small number of transactions in comparison to Eastern Germany. In this context, Lower Saxony is atypical to federal states in Western Germany. In 2006, 14,783 ha UAA were sold, equating to 0.52 % of the total UAA in Lower Saxony, the highest share of sales in all federal states in Western Germany, approximately as high as in Saxony (0.54 %). In 2006, the average sales constitute 0.31 % in Western Germany, and 0.94 % in Eastern Germany (STATISTISCHES BUNDESAMT, 2006). The land price in Lower Saxony averages €13,170/ha, which is below Western Germanys average price of €15,941/ha. The average plot size fluctuated between 2.4 ha and 2.7 ha in recent years.

In summary, the land sales market is a narrow market: the land price has slightly decreased as has the total transacted area and the number of transactions (see Table 13). For further information concerning the sales market in Germany in general, we refer the reader to the main report for Germany.

Table 13: Land sales market in the Lower Saxony 2000-2006

	2000	2001	2002	2003	2004	2005	2006	Growth rate 2000-2006 (%)
Land price (€/ha)	13,892	14,171	14,305	13,886	13,360	13,236	13,170	- 5.2
Transacted land (ha)	15,098	14,547	13,286	13,826	14,919	14,724	14,783	- 2.1
Number of transactions	6,229	5,920	5,537	5,737	5,724	5,413	5,673	- 8.9
Plot size (ha)	2.42	2.46	2.40	2.41	2.61	2.71	2.61	+ 7.9
Share of sales (%)	0.53	0.52	0.47	0.49	0.53	0.52	0.52	- 1.9

Source: STATISTISCHES BUNDESAMT, 1999-2006, own calculations.

In comparison, the share of rented land of the total UAA in Lower Saxony is the third lowest of all federal states. In 2005 about 35,818 farms rented 1,089,050 ha UAA, which equates to 52.7 % of total UAA. The rent share in the case study region Weser Ems is at the low level of 48.3 % (see Table 14).

Table 14: Average rental price of new rented land, share of rented land and growth rate in Weser Ems

	1999	2001	2003	2005	Growth rate 1999-2005 (%)
Total average rental price (€/ha)	339	339	343	349	+ 2.9
Average rental price for arable land (€/ha)	416	399	452	436	+ 4.8
Average rental price for grassland (€/ha)	226	207	197	173	- 23.5
Share of rented land in total UAA (%)	42.6	44.5	47.1	48.3	+ 13.4

Source: ASE 1999, 2001, 2003, 2005 (Own calculations).

The rent share in Lower Saxony fluctuated from 52.2 % in 1999 to 55.7 % in 2003 and down again to the present value of 52.7 % (SITUATIONSBERICHT, 1999-2008). In the case study region of Weser Ems, the rent share rose from 42.6 % to 48.3 % and the land rent for new rented areas increased from €339/ha to €349/ha between 1999 and 2005. In summary, from 1999 to 2005 the land rent market in the case study region is characterized by increasing prices (total growth rate 2.9 %) and increasing rent share (total growth rate 13.4 %).

The relatively high volume of the land market in Lower Saxony can not only be linked to the specific farm structure of the region, but is at least partly policy induced. One reason for the increasing rental prices is the fact that farms with high-stocking densities increasingly need land in order to comply with the restrictions for organic nitrogen application of the Nitrates Directive. With decoupling and cross compliance, this restriction became, for the first time, financially relevant for intensive dairy farms. Furthermore, farmers are concerned with traditional values; one of their main aims is to maintain family property. Even if farmers quit the farm business, they will rent land, but they will not sell it. For further information concerning the rental market in Germany in general, we refer the reader to the main report for Germany.

A.2.5. Drivers of land value

According to interviews with leading experts, land sales prices in Lower Saxony are influenced by market forces rather than by policies like decoupling, rural development and other measures. The imperative factors for the land prices are the level of the present agricultural commodity prices and the agricultural productivity of the plot. The size of the farm, the development of the city population, and informal institutions hold no relevance regarding land prices. The regulations on high stocking and the extent of bio energy production have a strong and increasing impact on land prices. Likewise, the infrastructural development is important to land sale prices, where in Weser Ems such development has more influence than in Bavaria or Saxony. Income taxes and value-added taxes have a larger influence in Bavaria than in Saxony and Weser Ems.

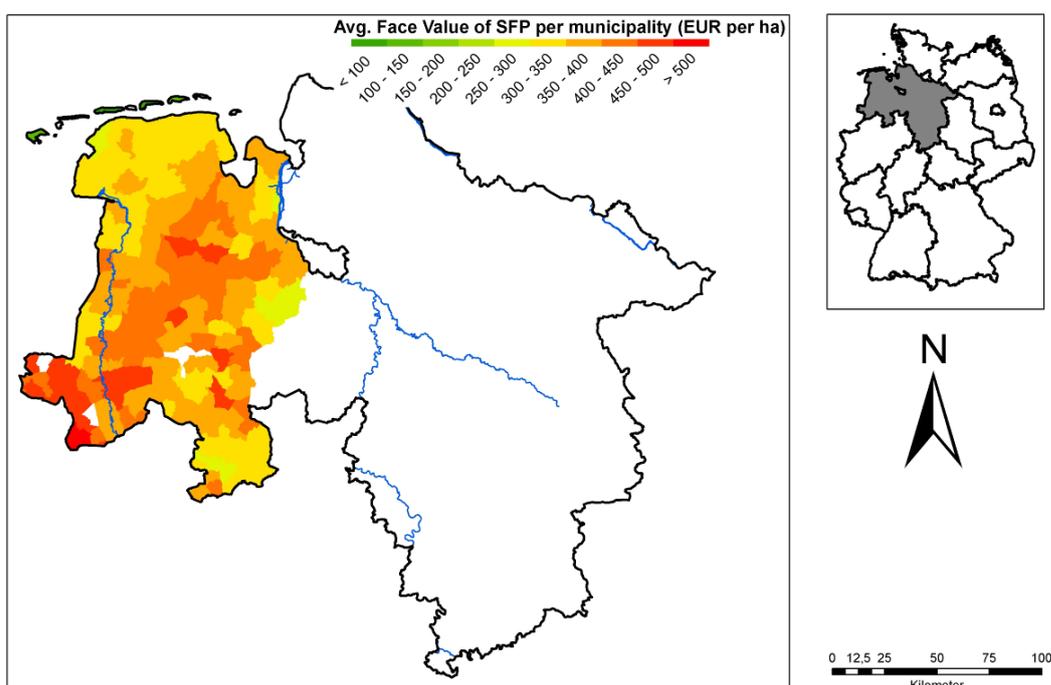
In the rental market in Lower Saxony, a steady price increase can be observed (see Table 14). However, the actual increases in commodity prices have led to, and will continue to lead to, an additional increase in the rental prices. The implementation of the SFP has had no influence on the rental prices. Similarly, other policy measures, like environmental or less favourite area payments, have no impact on rental prices. The same holds for taxes, the development of interests, and informal institutions. For further information concerning the drivers of land values in general, we refer the reader to the main report for Germany.

A.2.6. Distribution of direct payments

With decoupling, a share of the livestock payments was redistributed over the grasslands in Lower Saxony. The remaining livestock payments were added to the payment entitlements of the farms which received payments before the reform. This is due to the different payments for arable land (€259/ha) and grassland (€102/ha), and the varying average face value per payment entitlement among municipalities – between €102/ha and more than €500/ha. Entitlement payments in Lower Saxony in 2007 totalled €354 million. The average face value for the whole of Lower Saxony is €379/ha (ZID). In municipalities in the southwest regions of the case study area, the face value of payment entitlements are highest (see Figure 29).

From 2009 until 2013 the differences in the face values will be adjusted step by step and it is estimated that the final regional payment for Lower Saxony will be €326/ha (SITUATIONSBERICHT, 2008). For further information concerning the distribution of direct payments in general, we refer the reader to the main report for Germany.

Figure 29: Average face value of SFP per municipality



Source: Own calculations, ZID.

A.2.7. Effects on structural change

During the last two years, the structural changes in Lower Saxony have slowed. Between 2005 and 2007, an average of 4.4 farms closed everyday. The two years prior, 6 farms closed daily. According to the first agricultural poll in 1949, there were 292,000 farms, six times more than today (LANDVOLK-PRESSEDIENST, 2008). Experts have shown that there are no recent changes regarding structural change in Weser Ems due to by decoupling. Of greater importance are the generational changes in farming families. For further information concerning the structural change in general, we refer the reader to the main report for Germany.

A.2.8. Effects of changes in SFP on land values

Experts have shown that until now, there have been no observable influences of the SFP on land values. If there is influence, it is very small in comparison to other factors (e.g. change in commodity prices).

For further information concerning the in general, we refer the reader to the main report for Germany.

A.2.9. Conclusions

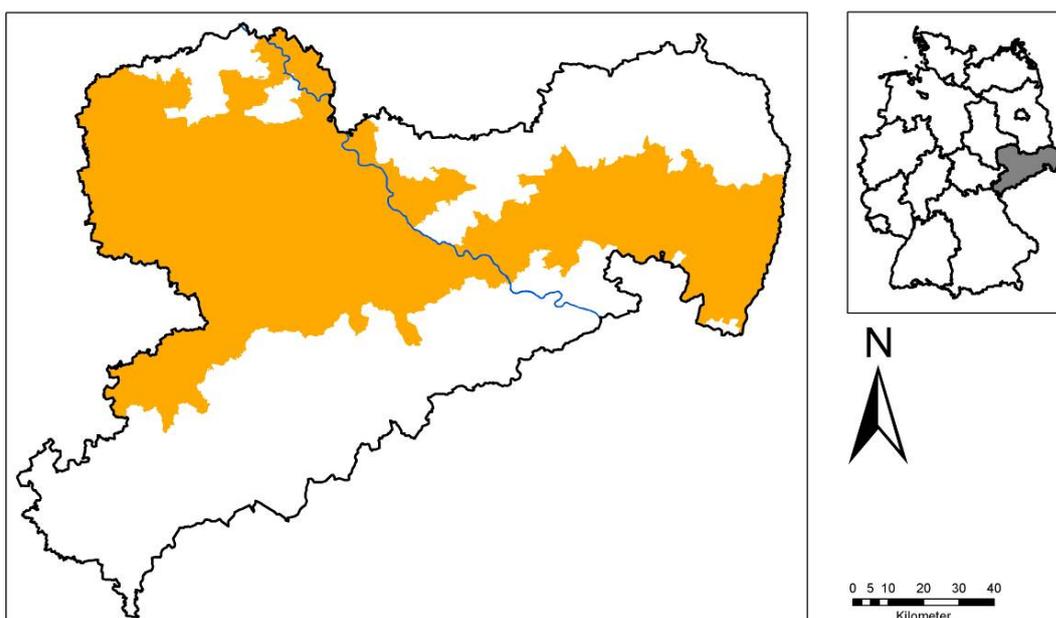
The land market of Lower Saxony is very steady with a slight increase in the land rentals, whereas land sales have shown a slight decrease. Experts have indicated that the change in the policies have had little or no influence on the land market. The main factors affecting the land market are the present level of the agricultural commodity price, the agricultural productivity of the plot and the stock limitations according to the Nitrates Directive, as in Weser Ems, where intensive livestock farming is very important.

A.3. REGIONAL REPORT SAXONY

A.3.1. Introduction

The Saxonian Loess Area (*Sächsisches Lößgebiet*) in the Federal State of Saxony, located in the southern part of the former GDR, was chosen as the representative region of East Germany (Figure 30). The utilised agricultural area of the Saxonian Loess Area in 2003 was 546,928 ha, of which 85 % is arable land and 15 % grassland. The number of farms in 2003 was 4,110. The average farm size is 133 ha, which is characteristic for East Germany, where the average farm size is 202 ha. On the contrary, in Western Germany the average farm size is 34 ha (ASE, 2003; BAUERNVERBAND, 2008).

Figure 30: The Saxonian Loess Area in the federal state Saxony.



Source: Own illustration.

In the Saxonian Loess Area, 69 % of the agricultural land is used by 9 % of the farms, all of which are larger than 422 ha. Concerning the legal form, 8 % of the farms are legal entities and use 59 % of the agricultural land. The remaining 41 % of the land is used by individual farms and partnerships (ASE, 2003). A further characteristic of East Germany is the high percentage of rented land. In the Saxonian Loess Area, 83 % of the agricultural land is rented (ASE, 2003), which is 2 % more than the average for East Germany. In Western Germany the share of rented land is 59 % (Bauernverband 2008). This difference in the farm and ownership structure between East and West Germany is the result of their respective historical development. First, East Germany traditionally had larger farms than in West Germany. Second, large collective farms with 200 or more landowners were created during the communist era. After the German reunification, however, these farms were transformed into cooperatives or companies. As these farms have not naturally developed, they have a high share of rented land. However, with increasing financial consolidation, more land is being purchased and the amount of rented land is decreasing.

The natural conditions in the Saxonian Loess Area are favourable due to the very fertile soils and the climate that is almost continental, with cold winters and hot summers characterised by little rainfall, approximately 550 mm per year. The favourable natural conditions lead to a high share of farms that specialise in field crops (see Table 15) with a high share of cereals, especially winter wheat, in the crop rotation (often more than 60 %). At 6.7 t/ha, the five-year average yield of wheat (2003-2007) in the Federal State of Saxony is slightly below the nationwide average of approximately 7.3 t/ha (STATISTISCHES BUNDESAMT a).

Table 15: Number of farms, land use and livestock density according to type of farming

Farm type	N° of Farms	Share of farms (%)	UAA (ha)	UAA (%)	Ø Size (ha)	LU	LU (%)	LU per ha UAA
Field crop	1,466	35.7	254,524	46.5	174	26,499	9.8	0.10
Grazing livestock (incl. dairy)	1,203	29.3	57,598	10.5	48	71,698	26.6	1.24
Poultry	68	1.7	1,372	0.3	20	32,840	12.2	23.93
Mixed	797	19.4	230,026	42.1	289	138,561	51.3	0.60
Others	576	14.0	3,408	0.6	6	335	0.1	0.10
<i>Total</i>	<i>4,110</i>	<i>100.0</i>	<i>546,928</i>	<i>100.0</i>	<i>133</i>	<i>269,932</i>	<i>100.0</i>	<i>0.49</i>

Source: ASE, 2003.

After the German reunification, the livestock density in the former GDR began to steadily decrease, a trend which continues. At present, the livestock density is consolidating at the relatively low level of 0.49 compared to 0.81 livestock units per hectare for the whole of Germany (ASE, 2003).

A.3.2. SPS implementation

Germany has introduced a dynamic hybrid payment scheme, where payment entitlements consist of a region-specific and farm-specific portions. The region-specific entitlements are again differentiated between grassland and arable land entitlements. But it is possible to activate a grassland entitlement with a hectare of arable land and vice versa. Grassland payment entitlements in Saxony have a value of €111/ha, while arable payment entitlements are €310/ha. The farm-specific payment is added to these values; thus, the value of payment entitlements differs depending on the production and structure of the individual farms. These differences are to be reduced gradually from 2010 to 2013, when the payment for each hectare should be the same. Another characteristic of the German decoupling model is the differentiation of the regional payments between federal states. The actual values of the payment entitlements for grassland and arable land vary among the federal states; the final regional payment will also vary among the federal states. The final regional payment for 2013 will be calculated based on the total amount of payments and the total number of payment entitlements in the federal states in 2009. It is estimated that in the Federal States of Saxony, Nordrhein-Westfalen and Schleswig-Holstein, the payment per hectare will be the highest at €359/ha. In the Federal State of "Saarland" the payments will be the lowest at €258/ha. The average value for Germany is €340/ha (BAUERNVERBAND, 2008). For further details concerning the payment scheme, we refer the reader to the main report for Germany.

A.3.3. Agricultural land regulations

Agricultural land regulations are the same across Germany. However, in East Germany some additional regulations are relevant because of the ongoing privatisation of formerly GDR state-owned land being carried out by the trust company BVVG (*Bodenverwertungs- und -verwaltung GmbH*). The relevant laws are:

- Compensation and Indemnity Act (Entschädigungs- und Ausgleichsleistungsgesetz, EALG);
- Regulation on Acquisition of Agricultural Areas (Flächenerwerbsverordnung, FlErwV).

The Compensation and Indemnity Act and the Regulation on Acquisition of Agricultural Areas were passed by the German parliament in 1994 and 1995. The Regulation on Acquisition of Agricultural Areas substantiates the EALG and specifies its application. The aim of the

Compensation and Indemnity Act is to restitute land to land owners dispossessed by the land reform of 1946 and to enable tenants who did not have the possibility to buy land in the former GDR, to buy land at a lower price (65 % of the current market price). Concerned persons can buy land at the lower price in a specific amount, which depends on the soil quality of the land. For example, former tenants can buy approximately 120 ha of land of a medium soil quality. They are, however, obliged to use this land agriculturally for at least 20 years; otherwise the BVVG may cancel the contract.

A.3.4. Land market developments

The land market in Saxony, as well as the land market of Eastern Germany, has been impacted by the communist era. Three main factors can be identified: (1) the privatisation of state-owned land, which was confiscated in 1946, (2) the transformation of large collective farms and state-owned farms into smaller private farms, partnerships or corporations, and (3) the reduction of old debts from the communist era.

During the land reform of 1946, farms with more than 100 ha were dispossessed, and 2.6 million hectares of this agricultural land were redistributed to 200,000 new farmers (mainly refugees), who received an average of 8.5 ha to establish new farms. Further, 335,000 people with less land (small farmers) received an average of 1.5 ha. The remaining 500,000 ha became public property in a so-called national land fund, and were redistributed to state-owned farms with an average size of around 600 ha in 1960 (HENKEL, 1993). Small farmers became full owners of the additional land. However, the land of the new farmers would be returned to national land fund if they stopped farming (LEHMBRUCH, 1998). Thus, the share of agricultural land in the national land fund grew again to more than one million hectares. By July 2007, the BVVG made restitutions of around 712,000 ha of agricultural land. A further 460,000 ha were sold to farmers. In July 2007, the BVVG still rented out 10 % of the total UAA in East Germany (550,900 ha). In Saxony, 6 % (or 53,600 ha) of the total agricultural land was still owned by the BVVG in 2007.

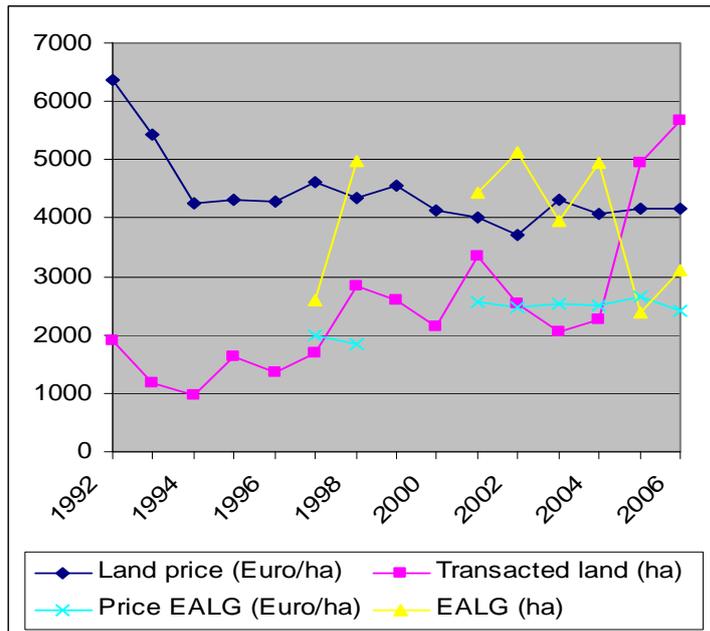
The original owners and farmers have, as outlined in the Compensation and Indemnity Act (EALG = Entschädigungs- und Ausgleichsleistungsgesetz), the possibility of buying land for 35 % lower than the market price. The purpose of this law was to compensate those affected by dispossession during the GDR era, and to enable tenants who did not have the possibility of buying land in the GDR to do so. Thus, the law should strengthen the economic situation of farmers in East Germany. Since 1992, 280,800 ha of agricultural land was sold at a reduced price, which amounts to 29 % of the total land sold during that time (BVVG, 2007, STATISTISCHES BUNDESAMT b). Applications for buying land within the Compensation and Indemnity Act (EALG) must be made by the end of 2009, because the EU-Aid Regulation limited the aid for farm land to 10 % of the current market value (NL-BZAR, 2007). By July 2007, the BVVG received 5,100 applications from farmers in East Germany to buy approximately 175,000 ha land at a reduced price. Furthermore, the BVVG plans to sell 25,000 ha annually. That means the remaining 375,000 ha owned by the BVVG should be sold before 2022 (BVVG, 2007).

The transformation of the agricultural sector, especially the restructuring of cooperatives and the access of new farmers from West Germany and the Netherlands, caused a large fluctuation in the land market. For example, in West Germany only 0.4 % of the agricultural area was sold annually, whereas in East Germany this number is 1.5 % (SIEGMUND, 2007). Farm restructuring is also influenced by the privatisation of farm land. Farmers, whose rental contracts with the BVVG have ended, can be threatened by the loss of land, which could be sold and bought by other farmers.

The reduction of old debts inherited from the communist era has played a role on the land market. Immediately after the reunification, farmers in East Germany could not afford to buy land due to these debts. Now, the financial situation of the farms has improved and the problem of these debts has been managed. Thus, farmers are beginning to consolidate their enterprises

and trying to increase their share of owned land. The demand for land increases as shown in Figure 31.

Figure 31: Land transactions and land prices in Saxony



Source: STATISTISCHES BUNDESAMT b.

Figure 31 also shows the prices per hectare of agricultural land and the land sold under the conditions of the Compensation and Indemnity Act (EALG), as well as prices paid for this land. The Compensation and Indemnity Act was enacted in December 1994, while the Land Purchase Regulation (*Flächenerwerbsverordnung*) became effective in December 1995. Thus, purchases in the frame of the Compensation and Indemnity Act began in 1996. In 1998, they were stopped by the European Commission, because the Compensation and Indemnity Act was not confirmed within EU-regulations. In 2000, the German Parliament changed the law and the purchases began again.

For land sales that do not fall under the conditions of the Compensation and Indemnity Act (approx. 375,000 ha in the former GDR), the BVVG worked out a new concept to accelerate privatisation. The main idea of this concept is that land under contracts with remaining duration of two years has to be publicly offered for sale and for rent. Thereby, the farmer with the highest bid will receive the land. On the one hand, the former tenant must buy the land if he does not wish to lose it, and on the other hand, prices for land sold by the BVVG are rising. The interviewed experts have criticised this practice of the BVVG and fear that the prices for land sold by private persons will also increase in the future. However, by 2006, the sales prices for land in Saxony were relatively stable. In contrast, even after 1994, they were declining rather than increasing (see Figure 31). During the first years after reunification, the land sales prices were higher due to the effects of influence from the West; in West Germany at that time, farmers paid an average of €14,000/ha for agricultural land.

In contrast to sale prices, rental prices have constantly increased since reunification (Table 16). In 1991, the average rental price for arable land in Saxony was €72/ha, which by 2005 had increased 71 %, to €123/ha. However, farmers are actually willing to pay more than €200/ha for renting arable land.

Table 16: Rental prices and share of rented land in Saxony

		1991	1993	1995	1997	1999	2001	2003	2005
Average rental price	€/ha	65	76	83	88	96	102	108	112
Rental price (arable land)	€/ha	72	84	89	98	105	112	119	123
Rental price (grassland)	€/ha	51	50	52	54	57	59	63	66
Share of rented land in total UAA	%	83.9	88.9	90.0	91.0	89.1	87.7	85.2	81.2

Source: STATISTISCHES BUNDESAMT c.

A.3.5. Drivers of land values

Experts have shown that land sale prices in the Saxonian Loess Area are influenced by market forces rather than by policies like decoupling, rural development and other measures. Agricultural commodity prices and productivity have a stronger impact, just as they do in the whole of Germany. More specific to the Saxonian Loess Area and East Germany is the increasing demand for land and the relatively low supply from private owners, which leads to an increase in land sales prices. On a more political level, the BVVG's land sales practices have also been a driving force. The BVVG offers land for sale which will be free from rental contracts within two years, and sells this land for the highest price. This leads to farmers making high bids to keep the land which they previously rented.

Another regulation which has an impact on rental prices in some areas is the Harz IV law, which regulates aid to unemployed people. An important stipulation of this law is that unemployed people receive no aid if they own any property. In regions with a high unemployment rate, this can lead to unemployed people selling their land, usually at very low prices because they cannot afford to wait for a better offer.

Just as all over Germany, taxes, the development of interest, and inflation have a low influence on land sales prices.

The influence of non-agricultural investors, for example from the bio-energy sector, is less important in the Saxonian Loess Area than in West Germany or the rest of East Germany, because the agricultural ministry of Saxony is very restrictive in its use of the Law on the Sale of Agricultural Land (*Grundstücksverkehrsgesetz*). The aim of this law is to support existing agricultural structures and it is possible to prohibit land sales to non-agricultural investors if a farmer is interested in the land. However, this special situation may change in future; due to administrative reforms, the agricultural ministry will lose its responsibility in overseeing land sales.

In the rental market in Saxony, a steady price increase can be observed since the reunification (see Table 16). One reason for this is the initially low average rental price of €65/ha in 1991. The average rental price for West Germany was at that time €217/ha. Experts have stated that in the long-run, increases in agricultural productivity and inflation influence rental prices. However, the actual increases in commodity prices led and will lead to an additional increase in the rental prices. Only two of eight experts have said that decoupling had or will have an influence on rental prices. The only influence it could have is on rental prices for grassland, because payments for grassland did not exist before decoupling and the introduced payments will even increase from €111/ha to €359/ha by 2013 (BAUERNVERBAND, 2008). Other policy measures, such as environmental or less favourite area payments, have had no impact on rental prices. The same holds for taxes, the development of interests, and informal institutions. Aside from the Law on the Sale of Agricultural Land (*Grundstücksverkehrsgesetz*), which has had little influence on the rental market, no regulation on rental markets exists.

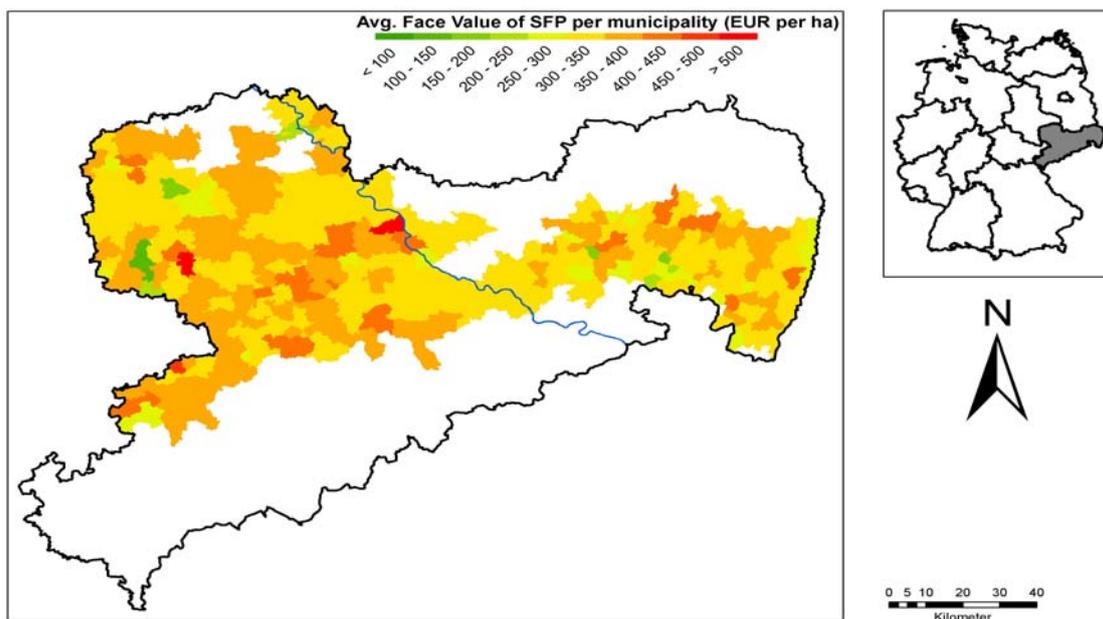
Furthermore, there are only certain infrastructural projects in the Saxonian Loess Area which influence rental or sales prices locally. Most of these major infrastructural projects were carried out in the 1990s after reunification. An important characteristic of the Saxonian Loess Area, as well as all of East Germany, is the migration of people mainly to West Germany, where there is a stronger labour market. Thus, there is low urban pressure only in the big centres in the Saxonian Loess Area, such as Leipzig or Dresden.

A.3.6. Distribution of direct payments

From 1993 to 2003, Saxonian agriculture received an average of €234 million coupled, direct payments per year. Around 90 % of these payments were paid for crops and the rest for livestock. During that time, direct payments grew from €111 million to €272 million. In 2004, they again increased to €288 million due to the introduction of the milk payment.

With decoupling, a share of the livestock payments was redistributed to the grassland in Saxony. The remaining livestock payments were added to the payment entitlements of the farms which had previously received livestock payments. Thus, and due to the different payments for arable land (€310/ha) and grassland (€111/ha), the average face value per entitlement payment varies between €111/ha and more than €500/ha between municipalities.

Figure 32: Average face value of payment entitlements per municipality in the Saxonian Loess Area



Source: ZID, 2005.

The average face value for all of Saxony is €352/ha (ZID 2005). In municipalities with a high face value of payment entitlements dairy or beef fattening farms dominate. From 2009 until 2013, the differences in face values will be adjusted gradually and it is estimated that the final regional payment for Saxony will be €359/ha (BAUERNVERBAND, 2008).

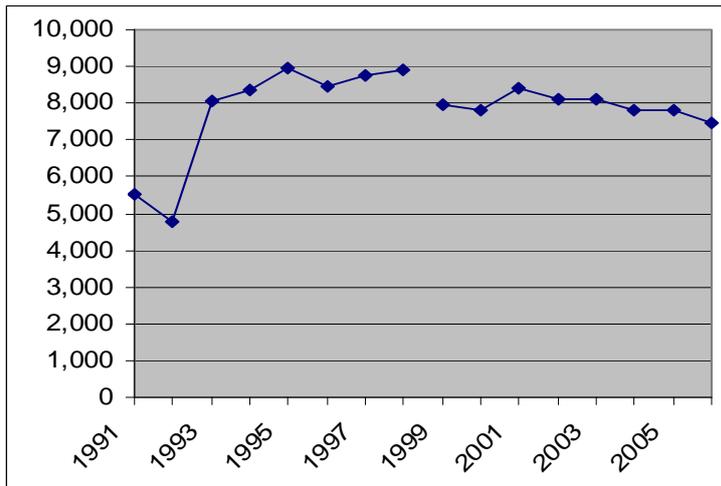
A.3.7. Effects on structural change

In East Germany, structural change is mainly caused by the restructuring of former cooperatives and the privatisation of land. Problems occurring with non-agricultural investments or infrastructure projects have thus far been buffered by the redistribution of state-owned land (BVVG areas). However, when the privatisation of land finishes as planned in 2022, the pressure on farmers will increase, as there will be no possibility to compensate such land losses.

In general, various developments concerning the number of farms in Eastern Germany can be observed since 1991. Figure 33 shows the development for Saxony. After reunification, many

new farmers started businesses and a more or less steady increase in number of farms can be observed in Saxony until 1998. Between 1998 and 1999 we have a break, due to a change in the regulation on how and which farms should be counted, statistically. After a peak in 2002, the number of farms began to decline. However, not all of these statistically-counted farms applied for direct payments by 2005. Of the 7,819 farms that were statistically counted in Saxony in 2003, 6,890 applied for direct payments. With the introduction of the dynamic hybrid decoupling scheme, farmers can also receive payments for grassland. Thus, 472 more individual farms (125 full-time and 342 part-time farms) applied for payments. This did not lead to a change in the number of farms in total; it was only a change in the number of farms which applied for payments.

Figure 33: Development of the number of farms in Saxony

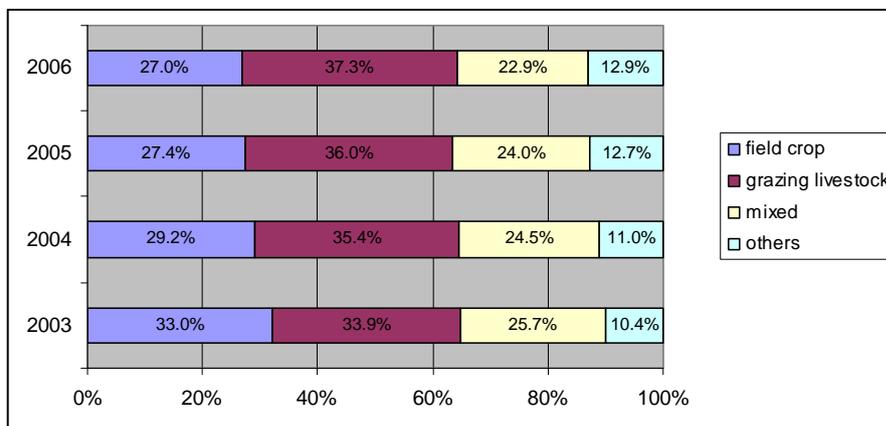


Source: STATISTISCHES LANDESAMT SACHSEN.

Thus, one cannot say that decoupling had an impact on the number of farms, nor on the average farm size.

Concerning the production structure, experts have said that there are strong negative effects on bull fattening, suckler cow keeping, dairy farming and sheep keeping. On arable farming, the SPS has no effect. However, Figure 34 shows a different picture. From 2004 to 2005 the share of field crop farms declined by almost 2 %. But this shows not a change in the production structure, it is the result that payments no longer being coupled to the products. Hence, standard gross margins of field crops in which the coupled direct payments were included are lower and the standard gross margins of livestock production have a greater weight.

Figure 34: Farm structure according type of farm from 2003 to 2006



Source: SMUL, 2007.

The labour force was not influenced by decoupling; rather, we can observe a long-term trend of steadily-increasing efficiency and declining livestock production in Saxony.

A.3.8. Effects of changes in SFP on land values

Changes in SFP are the same throughout Germany, thus we can not identify specific affects of such changes on land values for the various regions. Possible affects are listed in the main report.

A.3.9. Conclusions

The land rental and, especially, the sales market in the Saxonian Loess Area are strongly influenced by its socialistic heritage. The share of land that is rented is 81 % (STATISTISCHES BUNDESAMT, 2005), a percentage which has been declining. Land sales prices (around €4,000/ha) are strongly influenced by the BVVG trust company's practice of privatising land; BVVG offers land to farmers and sells it to the highest bidder. In some areas, the Harz IV law has had an impact on sales prices, because it stipulates that in order to receive unemployment benefits, people must sell their property for any price before receiving public aid.

In various interviews, experts have stated that decoupling has had no significant impact on neither the currently increasing land sales prices, nor on the steadily increasing land rental prices. Furthermore, the land market in the Saxonian Loess Area has been unaffected by other policy measures; sale and rental prices are more influenced by agricultural commodity prices and by increasing productivity.

Urban pressure and infrastructure projects are of minor importance to the rental market as the population in East Germany declines; there are only two main centres in the Saxonian Loess Area – Leipzig and Dresden.

Structural change in regards to changes in the number of farms is also left unaffected by decoupling within Saxony, even as the number of full- and part-time farms that applied for payments has increased. The reason for this is that with decoupling, grassland is also eligible for payments and many of these small farms have a high proportion of grassland.

It can also be observed that within the production structure, decoupling has led to a decrease in beef fattening as well as in the raising of suckler cows and sheep.

An increase in grassland rental prices can be expected with future changes in the SFP scheme, as payments for grassland are increasing as we move towards a regional payment in 2013. However, this is expected to happen throughout Germany.

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