Genedec

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End of Project Report

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Introduction

GENEDEC was a European project funded under the 6th Framework. It was co-ordinated by INRA Grignon with ten European partners and a time frame of 42 months. The purpose of the project was to conduct a quantitative and qualitative assessment of the socio-economic and environmental impacts of the decoupling of direct payments on agricultural production, markets and land use in the EU. It was envisaged that the pan-EU nature of the project would facilitate an international comparison of the effects of decoupling and would provide policy makers with sufficient information to identify the key winners and losers from decoupling throughout the EU. The project aimed to provide insights into the workability of decoupling and its impacts, and to analyse alternative policy options to improve the agricultural support system. Specifically, through the use of farm level models, this project estimated the effects of existing and proposed decoupled support schemes on production, land use and land prices and the implications for farm incomes and the future structural development of farms. The project was divided into 9 Work Packages depending on objectives and time frame of the project. The main role of RERC Teagasc was in Work Package 2 which aimed to develop farm level mathematical models and used the models developed to determine the impact of decoupling on Irish farms. The work in RERC started in November 2004 and ended in May 2006. A brief description of the models developed and results generated by RERC is provided here.

Background

In Ireland, all direct payments made to farmers were completely decoupled from production in January 2005. A single payment is now paid to farmers based on payments they received in a historical reference period. There have been earlier studies on possible impacts of decoupling on Irish farms (Breen et al., 2005; Breen and Hennessy 2003). The results from these studies showed that decoupling was likely to accelerate the pace of structural change in Irish farming, for instance, thirty-two percent of dairy farms were projected to exit the sector and ten percent of cattle farms were estimated to become entitlement farmers, that is using their land to claim the decoupled payment but not actually producing any tangible products.

These studies took a generalised view of farms in Ireland and didn't address the regional differentiation that may arise as a result of decoupling. It is fair to say that the impact of a policy change may be different at different regional levels. Any possible changes especially in relation to land use and milk quota structures are highly sensitive to the geographical location of the farm. The work under GENEDEC moved from this generalised view of farms and focussed on different types of farms to determine the impacts of decoupling of farm payments at the regional level in

Ireland. The input data, regional definitions and modelling platform were in the same format as those used by other partners in the project so that the results at the end were comparable.

Methodology

A schematic diagram of the methodology used for this project is shown in Figure 1. The first step of the methodology involved a collation of farm level data on physical entities of a farm, such as farm size and animal numbers; farming activities which take place on farm such as dairying activities, beef activities; and farm accounting details such as input costs, revenues received.

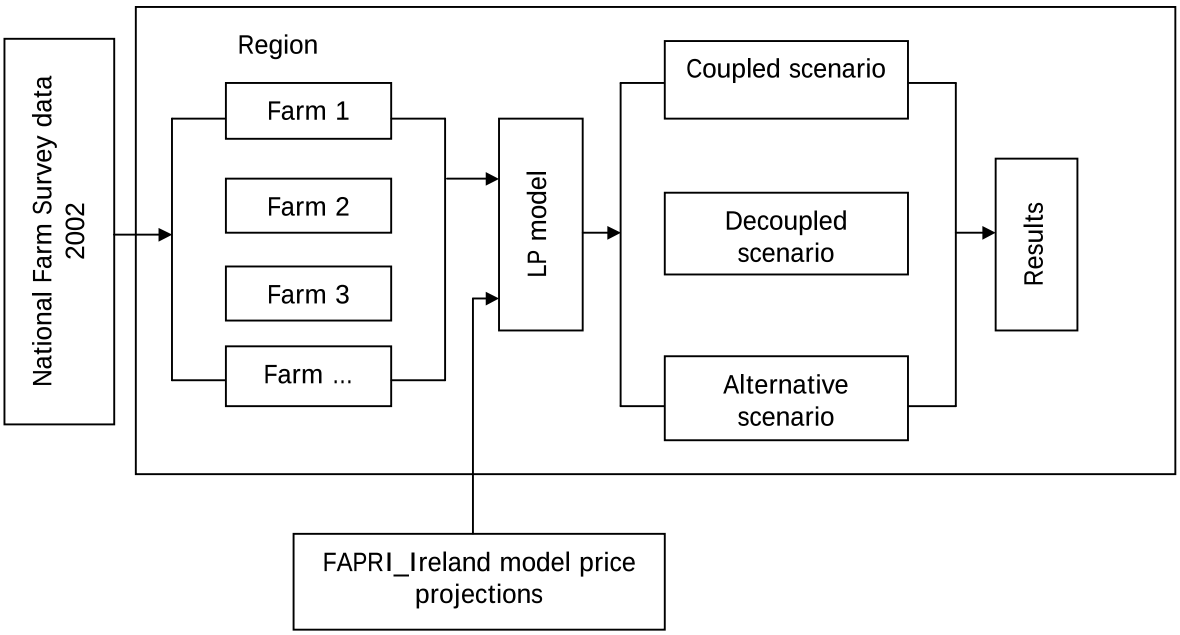

Figure 1: A schematic diagram of the methodology

The study used Irish National Farm Survey Data from 2002, part of the Farm Accountancy Data Network (FADN), which collects accountancy data carried out by member states of the EU. There are seven NUTS III regions in Ireland (excluding Dublin region where the number of farms is very small) as shown in Figure 2.

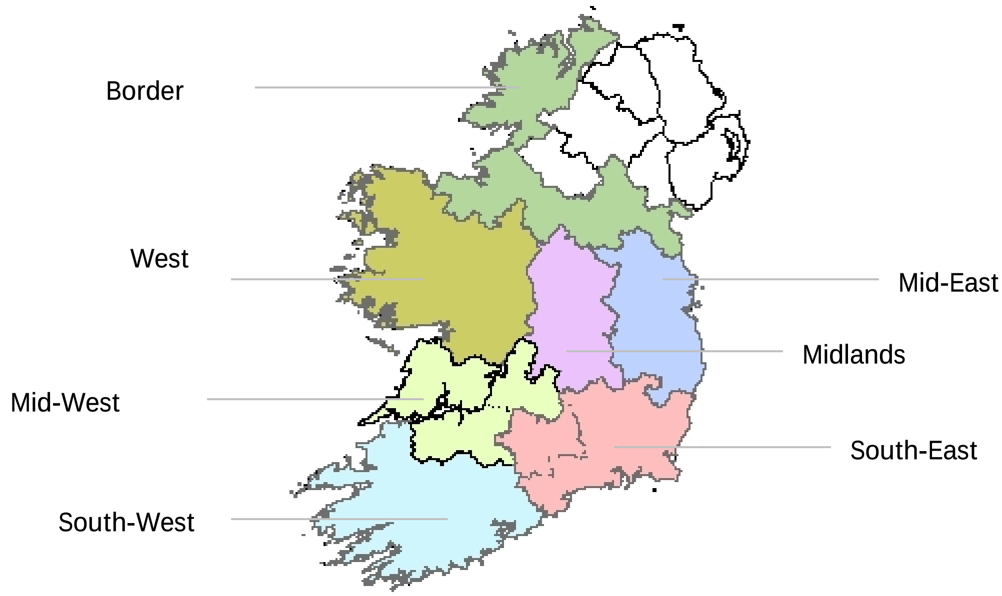

Figure 2: Irish regions at NUTS III level

The second step of the methodology involves a selection of representative farms and separation of farms into groups with similar characteristics. Clustering techniques namely hierarchical, non-hierarchical, iterative partitioning and factor analytic techniques were available for this purpose.

A number of variables such as total farm area, gross margins, animal numbers, milk yield, labour units, productivity (per hectare area and per labour unit) were used to group farms into clusters. The identification of farm variables to include in the cluster analysis is largely arbitrary but one should take care to use variables which are directly related to the criteria on which grouping is based. For example, if dairy farms are to be clustered together, the most obvious variables to be chosen are dairy numbers, milk yield, total milk production and milk quota number. Cluster analysis measures the degree of similarity between two or more unrelated objects in terms of the number of variables they possess. This method enables the formation of groups of objects with homogenous characteristics within the groups and heterogeneous characteristics between the groups (Everitt, 1993). The clusters in this study were formed using an agglomerative hierarchical cluster technique. Hierarchical cluster analysis has been used to form groups in different farm level analyses (Rey and Das, 1997; Kirke and Moss, 1987; Solano et al., 2001). In this technique, all farms were placed in different groups at the beginning and after that, farms closer to each other were grouped together in a stepwise fashion. It follows then that all farms should be placed in one single group at the end. Within the hierarchical method, there are a number of techniques to measure the distance between two variables and link them if they are similar. The Squared Euclidean Distance Method was used in this study to measure distance between variables and the Ward Method was used to link similar variables. These methods are useful when there are multi-dimensional variables such as farm size and milk yield (Solano et al., 2001). Once the farms were clustered in different groups, average values from each farm group were taken and used as inputs to the base year (2002) in the study. As stated earlier, a number of farm variables such as farm size, animal numbers, gross margin, labour units, milk yield etc. were used in the cluster analysis, but for simplicity, farm types are displayed in the results section according to different scales of farm gross margin;

i. Low scaled farms: < € 10,000
ii. Small scaled farms: €11,000 - €25,000
iii. Medium scaled farms: €26,000 - €50,000
iv. Large scaled farms: €51,000 - €75,000
v. Specialist farms: > €76,000

The third step of the methodology involved developing an optimising mathematical programming model which maximises an objective function within a number of limiting constraints. This study used a farm level dynamic linear programming model to maximise regional gross margin; first, under a baseline scenario where payments were coupled with production and second, under an alternative scenario where payments were decoupled and a single farm payment was introduced. The model used a time frame of 15 years and had an objective function to maximise farm gross margins within a set of constraints. It consisted of all possible farm enterprises (i.e., dairy, beef, sheep and tillage) for each type of farm present in a region. However, all the farming activities in individual farms were independent of each other and a farm could not start a new enterprise without investing starting capital if that enterprise did not exist in the base year i.e., Year 1 of the model run. The only link between different farms within a region was through land and milk quota transfer. If there was no transfer of these two components between the farms, the objective function of the model was the cumulative gross margins of individual farm types within that region. In the model, farmland was comprised of grassland, permanent pasture and arable land (in the case of tillage farms). Grassland was further divided into grazing land and silage land with silage land restricted to a maximum of 50% of total grassland. Livestock were constrained under a fixed stocking rate (as recorded in the base year) over grazing land. Land transfer was constrained in a way that a farm could only lease in land if another farm was leasing out land. At the equilibrium, total rented in land was equal to total leased out land. Grassland could not be converted to arable land, however, arable land was allowed to transfer to grassland or could be leased out.

Livestock numbers present on the farm type were first initialised in the base year according to the survey data. In subsequent years, the number of livestock in year y was dependent on the number of livestock in period y-1 plus purchased animals less animals that had been sold. Livestock replacements were reared from the herd or alternatively purchased. Dairy animals were culled every five years, whereas calves, beef, lambs and ewes could be sold whenever it was most profitable. Total feed used on the farm depended on the energy, protein and dry matter requirements of each animal and the content in each feed type. Feed requirements were based on growth, maintenance, pregnancy and production levels. There were three types of feed available; fresh grass, grass silage and concentrate feed. At least a minimum level of grass silage and concentrate feed based on the survey data was maintained on a farm.

Milk production linked different types of dairy farms in a region by allowing milk quota transfer between dairy farms. Dairy farms had a fixed quantity of owned quota as recorded in the base year. Total milk production was a function of cow numbers and was equal to quota owned in the base year. However, flexibility in milk production was allowed in the model through leasing and renting of milk quota. A farm could rent in quota only if leased out quota was available from another dairy farm within the same region.

The model did not include a crop rotation constraint because tillage farming is not an important activity in Ireland. In this model, the crop choice set consisted only of the crops grown in the base year. Set aside land was constrained between 5% (obligatory level) and 25% (voluntary level) of the total arable land. Crop variable costs including fertiliser costs, seed costs and insecticide costs, were taken from published data. All machinery operations required for arable crops were contracted in and used as contract costs in the model. There were two types of labour present on farms; family and hired labour. Total labour used on farm was a function of the labour requirements by each enterprise.

Prices of different farm commodities and costs of different farm inputs such as fertiliser and seed costs, transport costs etc., were the averaged values in each farm group generated in the cluster analysis. As the model used in this study was a dynamic model, these prices and costs were required to be projected over 15 years. Therefore, price indices from the FAPRI-Ireland model[1] were used in the study. The FAPRI-Ireland model is a partial equilibrium model which econometrically estimates prices of different agricultural commodities over a length of time taking account of the world and EU prices. Two sets of price projection were generated by the FAPRI-Ireland model; one under the baseline scenario which was a continuation of AGENDA 2000 policies and the second, under a decoupled scenario, which was the 2003 MTR of the CAP. The current study used the price and cost projections emanating from the FAPRI-Ireland baseline and MTR scenarios and applied these projections to the farm level data.

The final step of the analysis involved running the model for the baseline and the MTR scenarios. The baseline scenario used the farm level data taken from each farm group and the set of projected prices for the baseline scenario. The farm data used in that scenario included all farm payments received by a farm in 2002. For the MTR scenario, all the payments received by a farm in 2002 were summed and paid to the farm as a single payment. This follows the decoupled payments taken up by Ireland based on historical payments. The single payment was linked to land and was paid on a per hectare basis and therefore claiming of payments was a land using activity in the model. The single farm payment was calculated on a per hectare of farmland basis and then added to the annual margins. This scenario used the set of price projections for the MTR scenario. Besides payments and prices, values for all other farm variables and parameters remained the same as under the baseline scenario, so that the difference between the results in these two scenarios could be concluded as the impact of decoupling.

Besides single farm payments based on historical payments, this study also looked at the possibility of a partial decoupling and a flat rate payment schemes. The partial payment scheme was based on a decoupled scheme implemented in France with partial payments such as a 25% arable payment, 100% suckler payment, 40% adult cattle slaughter payment, 100% calf slaughter payment and 50% sheep payment. All other farm payments were decoupled from production. The flat rate scheme used a flat rate (€270 / ha) attached to the agricultural land which was used in all types of farms.

[1] FAPRI-Ireland model is part of the FAPRI model which was established in the Universities of Iowa and Missouri in 1984 and uses partial equilibrium models of agricultural markets to show the effects of policy change on commodity prices, volumes of production and trade and many other economic indicators. For a description of the Irish model see Binfield et al. (2003)

Results

The farm level model was run for each of the seven NUTS III regions under baseline, full decoupling, partial decoupling and flat rate decoupling schemes. The results for each region are described below under each region's heading.

The Border region

In this region, medium scaled dairy farms which received higher milk prices and had low input costs in the base year were projected to increase farm margin under the full decoupling scenario (Table 1). These farms increased their milk production by renting in milk quota at the expense of less efficient dairy farms in the region. The farms were benefited under all three decoupling scenarios. However, increase in margin under partial decoupling scenario was lower than under the other two scenarios. The small farms in this region were projected to lose more under a full decoupling scenario compared to the other two scenarios. In the case of flat rate scenario, the flat rate payment was more than the single farm payment received by these farms, hence, decrease in margin for these farms was smaller compared to the full decoupling scenario.

Under partial decoupling scenario, these farms kept on suckler cows to receive suckler payments and produced male calves to be sold at one year of age. This minimized the decrease in farm margin to some extent. The effect on larger farms was similar to that of smaller farms but to a greater extent. Beef farms reduced beef animals on farm as expected once payments were decoupled. The majority of farms had a decrease in margins except those farms where beef production was making a loss and once the payments were decoupled these farms had a reduction in variable costs which improved their farm margins. The beef farms in this region suffered the most under partial decoupling scenario. This was because the coupled payments under partial decoupling were not lucrative enough to increase beef production, and with lesser farm payment, the farm margin decreased further compared to the full decoupling scheme. These farms removed all beef animals but maintained suckler cows and increased the number of male calves sold. The flat rate payment was almost the same as the single farm payment, hence, there was not a big difference compared to full decoupled scenario except in the small beef farm group where lower rate of payment under a flat rate caused a substantial decrease in farm margin.

Sheep farms had a slight increase in farm margin under full decoupling and increased sheep numbers substantially. However, these farms lose out under partial and flat rate decoupling scenarios. In the case of tillage farms, farm margin remained almost the same under full and partial decoupling scenarios. However, under full decoupling, these farms moved arable land to grassland to expand livestock production and in the case of partial decoupling, the farms carried on arable production and increased grassland by leasing in land from other farms. The tillage farm had a substantial decrease in margin under flat rate scenario as the flat rate was lower than the single farm payment attached to land.

Table 1: Percentage change in farm variables under different decoupling scenarios on farms in the Border region

			Percentage change in farm margin in 2013		
	Base year	Single farm payment	Full	Partial	Flat rate
Farm margin	€	€			
Dairy					
Small	21,165	3,095	-27	-21	-14
Medium	33,036	7,597	+27	+13	+28
Large	68,3998	10,462	-3	-18	+3
Beef					
Low	5,872	5,074	-20	-43	-17
Small	12,468	13,125	+6	-34	-30
Medium	29,349	20,250	-6	-11	-3
Sheep					
Small	10,407	4,548	+5	-1	-18
Tillage					
Large	62,806	32,244	+1	0	-28
Livestock					
Dairy					
Small	20		-25	-8	-25
Medium	28		+33	+31	+21
Large	50		-8	-13	-2
Beef					
Low	23		-35	-35	-61
Small	45		-44	-44	-69
Medium	99		-32	-32	-63
Sheep					
Small	72		+46	+46	+46
Tillage					
Large*	71		+44	+92	+51
Grassland use					
Dairy					
Small	19.5		0	-9	0
Medium	40.4		0	+8	0
Large	67.6		0	-6	0
Beef					
Low	17.2		0	-10	0
Small	28.1		0	-10	0
Medium	68.5		0	-10	0
Sheep					
Small	7.1		0	0	0
Tillage					
Grassland	22.7		+216	+81	+216
Arable land	49.1		-100	0	-100

***** *beef numbers*

The Mid-East region

In this region, there were three groups of dairy farms, from which the specialist dairy farms were projected to benefit most from full decoupling, as milk production is profitable for these farms and they increased their production by renting in milk quota from other farms. Although large farms decreased their milk production, they were still producing male calves to sell and were therefore able to compensate the loss due to reduced milk production. All dairy farms experienced a decrease in farm margin under partial decoupling scenario compared to the full decoupling scheme. However, under the flat rate scenario, all dairy farm groups had a slight increase in farm margin as the flat rate was higher than the single farm payment received by these farms. There was a decrease in dairy animals on farms in the medium and large dairy farm groups as milk quota moved from these farms to the specialist farms. There was also a move of grassland to beef farms under the full and partial decoupling scenarios.

Table 2: Percentage change in farm variables under different decoupling scenarios on farms in the Mid-East region

	Base year	Single farm payments	Percentage change in farm margin in 2013		
			Full	Partial	Flat rate
Farm margin	€	€			
Dairy					
Medium	55,809	10,127	-3	-9	+5
Large	67,725	12,315	0	-2	+5
Specialist	131,370	29,551	+9	+2	+6
Beef					
Medium	36,207	21,991	+42	+47	+3
Sheep					
Medium	41,456	14,477	0	+8	+7
Tillage					
Medium	55,799	34,259	+8	+35	-7
Livestock					
Dairy					
Medium	9		-3	-8	+5
Large	63		-11	-10	-11
Specialist	94		+8	+9	+5
Beef					
Medium	90		+88	+147	+92
Sheep					
Medium	194		+56	+47	+56
Tillage					
Medium*	169		+188	+149	+240
Grassland use					
Dairy					
Medium	45.4		-10	-10	0
Large	64.4		-10	-10	0
Specialist	119.3		0	-10	0
Beef					
Medium	51.8		+12	+52	0
Sheep					
Medium	57.9		0	-7	0
Tillage					
Grassland	84.2		+46	0	+46
Arable land	38.4		-100	0	-100

* *sheep numbers*

Beef farms in this region had a profitable beef system in the base year, hence, these farms maintained beef production even when payments were decoupled. However, these farms decreased 2 year olds on farms and increased the number of beef male calves sold after one year of age. These farms also increased sheep numbers by 27%. These farms had a slight increase in the farm margin under partial decoupling as the number of animals increased to exploit attached payments. The margin decreased substantially under flat rate scenario compared to the other two scenarios. The effect of decoupling was positive under all types of scenario in this region. These farms increased sheep numbers on farms substantially. Sheep farms in the region were projected to benefit more under a flat rate payment scheme. Tillage farms benefited under both full and partial decoupling scenarios. There was a substantial increase to farm margin under partial decoupling scenario when farms continued arable farming, where as under other decoupling scenarios arable land was moved to grassland. Under all three scenarios, there was a substantial increase in sheep numbers on farms.

The Midland region

There were two groups of dairy farm in this region and both of them were projected to improve farm margins under full decoupling scenario, although for different reasons. The large dairy farms increased their milk production by leasing in milk quota from farms in the medium dairy farm group. The medium sized farm group increased their farm margin by increasing beef animal numbers, as beef production was more profitable than milk production. The large farms also had an increase in margin under partial decoupling although the increase was to a lesser extent. However, the medium farms suffered a loss when payments were coupled partially. There was reduction in milk production as well as beef production on farms. Under the flat rate scheme, all dairy farms in this region had an increase in margins. None of these farms moved grassland under any decoupling scenario. The medium scaled beef farms in this region did not benefit from any decoupling scenarios. These farms reduced beef numbers when payments were decoupled but kept on sucklers and increased the number of calves sold. The small beef farms had an increase in margin under full decoupling as they reduced beef animals to zero and saved input costs.

Table 3: Percentage change in farm variables under different decoupling scenarios on farms in the Midland region

	Base year	Single farm payment	Percentage change in farm margin in 2013		
			Full	Partial	Flat rate
Farm margin	€	€			
Dairy					
Medium	39,769	17,990	+14	-3	+2
Large	73,860	18,675	+19	+12	+15
Beef					
Medium	38,254	24,794	-6	-10	-38
Small	11,428	14,426	+15	-57	-46
Livestock					
Dairy					
Medium	22		-25	-25	-25
Large	45		+10	+10	+10
Beef					
Medium	111		+36	+36	+72
Small	61		-67	-67	-100
Grassland use					
Dairy					
Medium	52.6		0	0	0
Large	74.1		0	0	0
Beef					
Medium	54.9		0	0	0
Small I	30.2		0	+12	0
Small II	35.2		0	-10	0

The Mid-West region

In this region, the medium sized farm groups among dairy farm groups did well under decoupling (Table 4). These were the most efficient dairy farms in the region which were also paying less for renting in milk quota than other farms in the base year. Farms in this group were also able to improve their margins under partial decoupling. All dairy farms faired better under flat rate compared to other decoupling scenarios, as the flat rate was higher than payments in other scenarios. There were only small and low scaled beef farms in this region and these farms completely removed all beef animals on farms under the full decoupling scheme. The small scaled beef farms had a small decrease in farm margin where as the low producing farms had an increase in farm margins as their input costs was reduced. All of the beef farms improved their farm margin when partial decoupling scenario was implemented. These farms reduced beef animals substantially but maintained suckler cows. Under the flat payment scheme, all beef farms had a decrease in farm margins as the flat rate was less than the rate of the single farm payment.

Table 4: Percentage change in farm variables under different decoupling scenarios on farms in the Mid-West region

	Base year	Single farm payment	Percentage change in farm margin in 2013		
			Full	Partial	Flat rate
Farm margin	€	€			
Dairy					
Medium	33,563	5,183	+18	+40	+30
Large	75,105	13,049	-17	-6	-7
Beef					
Small	21,913	26,351	-5	+5	-11
Low	7,292	11,132	+11	+48	-17
Livestock					
Dairy					
Medium	28		+35	+51	+35
Large	63		-2	-12	-2
Beef					
Small	118		-100	-70	-100
Low	47		-100	-64	-100
Grassland use					
Dairy					
Medium	33.9		+31	+12	+31
Large	76.9		0	0	0
Beef					
Small	92.3		0	0	0
Low	33.6		0	0	0

The South-East region

The medium sized dairy farms in this region benefited from decoupling in all scenarios. They were able to increase their production by renting in milk quota from other farms and moving land within the farms from beef to dairy. The specialist dairy farms had a substantial increase in farm margin under full decoupling. These farms pooled (pulled?) in milk quota from other less efficient dairy farms and increased their milk production by one third. However, these farms lost out when a flat rate payment was introduced.

There was only one medium sized beef farm group in this region. The farms in this group had a slight increase in margin under full decoupling by reducing number of beef animals by 40% and cutting input costs. These farms also increased sheep number which helped in increasing overall farm margin. There was a decrease in margin when payments were partially decoupled or a flat rate was introduced. The farm margin on tillage farms in this region decreased when payments were decoupled. The farms removed their arable land completely from production and kept it just for claiming payments (abandonment farms). The situation was similar under the partial decoupling scenario but when the flat rate was introduced, the arable land moved to grassland to accommodate additional sheep on farms.

Table 5: Percentage change in farm variables under different decoupling scenario on farms in the South-East region

	Base year	Single farm payment	Percentage change in farm margin in 2013		
			Full	Partial	Flat rate
Farm margin	€	€			
Dairy					
Medium	31,936	10,478	+35	+23	+30
Large I	63,739	20,203	0	-12	-13
Specialist	118,151	49,832	+31	+9	-3
Beef					
Medium	52,465	30,142	+7	-12	-49
Tillage					
Large	83,469	40,764	-5	-5	-56
Small	18,254	10,131	-11	-4	-12
Livestock					
Dairy					
Medium I	24		+29	+36	+52
Large I	50		-29	-29	-23
Specialist	66		+34	+31	+9
Beef					
Medium	120		+37	+42	-100
Tillage					
Large*	99		-40	0	-83
Small*	27		-100	-67	-82
Grassland use					
Dairy					
Medium I	32.3		0	+5	0
Large I	66.4		0	0	0
Specialist	114.9		0	+4	0
Beef	28.1		0	0	0
Medium	54.7		0	+4	0
Tillage					
Large (grassland)	60.3		0	0	+54
Large (arableland)	32.8		-100	-100	-100
Small (grassland)	25.0		0	0	+32
Small (arableland)	7.9		-100	-100	-100

* *sheep numbers*

The South-West region

In this region, surprisingly all of the larger dairy farms decreased milk production under full decoupling scenario. However, the same trend was seen under the baseline scenario where Agenda 2000 was implemented. In this region, larger dairy farms had higher input costs. Hence the model predicted these farms to reduce input costs and improve margins. This explains why under decoupling scenarios, these large farms decrease milk production to improve farm margins. The small farms with low input costs benefited most under decoupling where they had a chance to expand milk production by renting in milk quotas from larger farms.

Table 6: Percentage change in farm variables under different decoupling scenario on farms in the South-West region

	Base year	Single farm payment	Percentage change in farm margin in 2013		
			Full	Partial	Flat rate
Farm margin	€	€			
Dairy					
Small	22,348	4,733	+41	+24	+23
Medium II	55,351	14,269	0	-7	-10
Large II	84,702	15,114	+1	-10	-12
Specialist	112,858	25,111	0	-7	-10
Beef					
Small	13,670	11,833	-16	-15	-21
Livestock					
Dairy					
Small	24		+48	+45	+48
Medium II	36		+11	+7	+11
Large II	59		-17	-20	-17
Specialist	69		-8	-3	-8
Beef					
Small	52		-64	+4	-64
Grassland use					
Dairy					
Small	22.4		+7	+15	+7
Medium II	65.8		-7	0	0
Large II	55.8		0	0	0
Specialist	93.3		0	0	-5
Beef					
Small	41.1	41.1	0	-7	0

On beef farms, beef production did not remain profitable under any of the decoupling scenarios and animals were decreased substantially.

The West region

There was only one type of dairy group in this region, which had medium scaled farms. These farms had only a slight decrease in farm margin under full decoupling and partially decoupled payments, however, they benefited from flat rate payments. All beef farms, except one small group, had a decrease in farm margin under full decoupling. These farms were selling male calves in the base year without any variable costs included; hence, gross margin at that year was greater than later years. These farms removed all beef from farms and after decoupling were receiving only the single farm payments. The small farms were producing beef at a loss and once payments were decoupled, they removed all animals thereby improving their farm margins.

However, these farms lose out substantially under partial decoupling as the payment rate was cut down. There was only a slight improvement of farm margin under the flat rate scheme.

Table 7: Percentage change in farm variables under different decoupling scenario on farms in the West region

	Base year	Single farm payment	Percentage change in farm margin in 2013		
			Full	Partial	Flat rate
Farm margin	€	€			
Dairy					
Medium	36,964	9,684	-2	-13	+3
Beef					
Low	5,710	5,662	-28	-86	-36
Small	10,980	14,175	+21	-52	+3
Sheep					
Small	12,161	4,806	+24	+57	+18
Livestock					
Dairy					
Medium	27		0	0	0
Beef					
Low	24		-100	-100	-100
Small	62		-100	-100	-100
Sheep					
Small	75		+267	+423	+261
Grassland use					
Dairy					
Medium	37.7		-21	0	0
Beef					
Low	16.4		0	-100	0
Small	44.3		0	-6	0
Sheep					
Small	18.2		+58	+115	0

The sheep farms in this region were projected to fair better under all three decoupling scenarios. These farms substantially increased sheep numbers to exploit the low cost input and increasing sheep price under decoupling scenarios.

Conclusions

The impact of a policy change differs widely between farm types and farm location. A farm level analysis of policy change at a regional level provides an opportunity to compare the impact of a policy change on farms between different regions. Furthermore, if the study regions, such as NUTS regions, are internationally recognised, then it is possible to compare the effect of an EU-wide policy change in a region of one country with regions in other countries. The example provided in this paper, can be compared to the results for other regions in the EU through the GENEDEC Partnership.

Output from the GENEDEC Project

Papers

a. S Shrestha, T Hennessy and S Hynes, 2006. The effect of decoupling on farming in Ireland: a regional analysis. Vol 46, No 1, 2007, IJAFR

b. T Hennessy, S Shrestha and M. Farrell, 2006. Regional diversities in Irish agriculture: a review of the geographical distribution of viable farming in Ireland (forthcoming in the Journal of Irish Geography)

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