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Old and new style of greening payments: economic and environmental implications for italian agriculture

The recent CAP reform proposed a green component of the first pillar that remunerates farmers for the provision of environmental public goods by allocating the 30% of the direct payment to the greening payment. In order to obtain this payment, the farmers shall ensure a specified set of mandatory farm practices. The purpose of this paper is to provide a first assessment of the greening measures on different farms types. The study, through FADN data (2009-2010), aims at quantifying the impact of these measures of three sample companies of the Marche region according to the original proposal (2011) and the current proposal CAP approved in June 2013. The results shows different impact of the green payment according to the characteristic, the location and the economical state of the farms.

Introduction

The EU Council of Ministers, European Parliament and Commission came to a political agreement on the future rules for the Common Agricultural Policy (CAP) at the end of June 2013¹. This agreement follows by two years of negotiation since the Commission published detailed reform proposals in 2011². A new Direct Payments System for farms will replace the current Single Payment Scheme (SPS). From 2015 onwards, the structure of the SPS will change significantly. It will be broken into a number of components, some of which must be applied by the Member State (mandatory), and some of which the Member State has the option of introducing (voluntary). These are:

¹ European Commission (2013) . Political agreement on new direction for common agricultural policy. Brussels, 26 June 2013.

² European Commission (2011). Proposal for a Regulation of the European Parliament and of the Council establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy. COM (2011) 625; Proposal for a Regulation of the European Parliament and of the Council Establishing a Common Organization of the Markets in Agricultural Products (Single CMO Regulation) COM (2011) 626; Proposal for a Regulation of the European Parliament and of the Council on Support for Rural Development by the European Agricultural Fund for Rural Development (EAFRD) COM(2011) 627; Proposal for a Regulation of the European Parliament and of the Council on the Financing, Management and Monitoring of the Common Agricultural Policy COM (2011) 628. Brussels, 2011.

- Basic payment (mandatory)
- Greening payment (mandatory)
- Young Farmers payment (mandatory)
- Areas of natural constraint / Less Favoured Areas payment (voluntary)
- Coupled payment for vulnerable sectors (voluntary)
- Front-loaded redistributive payment (voluntary)
- Small farmers payment (voluntary).

The direct payments in Pillar I are mainly aimed to provide 'basic annual income support to EU farmers', however the most prominent change is the introduction of a greening component to Pillar I (Westhoek, 2012). The integration of environmental concerns into the CAP, or 'greening' as it is often referred to, features as a core element of the objectives surrounding the legislative proposals for the future CAP (Hart and Little, 2012). In fact the new CAP proposal lays on two main principles: one is the acknowledgement of the need of a support to farmers' income in order to counterbalance instability and decline; the other is the remuneration of public goods produced in agriculture by farmers (such as landscapes, farmland biodiversity and climate stability) and supplied to the civil society (Zeijts H. van et al. 2011). The articulation of direct payments in several components follows these principles, with the proposal of a base payment that provides direct support to farmers' income and the green payment that is conditioned to the production of public goods (Cardillo et al., 2012). According to the proposal, Member States will dedicate 70% of their Direct Payments national envelope to the new Basic Payment, 30% to the Greening and 2% to Young Farmers.

The purpose of this paper is to evaluate the impact of the greening payment on farm income in terms of cost compliance and in different farms types based on the Farm Accountancy Data Network (FADN-RICA) 2009-2010. In detail, the analysis of the impact of greening was carry out for three sample farms (arable land; vineyard; grassland upland) of the Marche region in order to observe the effects of the original proposal (October 2011) and the current proposal CAP approved in June 2013. The paper is intended to determine whether the amount of the environmental contribution proposed in the first pillar can balance alone the charges resulting from the new obligations of "greening" set out in articles 30,31,32 of the new CAP. The paper is organized as follows. In the next section we focus our attention on green payments as part of Pillar 1 Direct Payments. The thirds sections is devoted to the case of study based on FADN-RICA regional data. Sections 4 contains the conclusions and the remarks.

The greening of direct payments

Environmental objectives have become increasingly integrated into the EU's Common Agricultural Policy (CAP) since the 1980s. The concept of 'paid stewardship' was first given prominence in community law with regulation ECC 797/85 of 1985, permitting Member States to provide funding from their own resources for agri-environmental incentive schemes in environmentally sensitive

area. The 1992 agri-environmental regulation (ECC 2078/92), introduced as part of the accompanying measures of the 1992 MacSharry Reforms, resulted in several more rural environmental incentive schemes being put in place. Member states of the European Union (EU) are shaping policies to implement the Agenda 2000 reforms of CAP, and these reforms are strongly influenced by the concept of multifunctionality (Dobbs and Pretty, 2004). The Rural Development Regulation, designed as a second pillar of the CAP, allows EU Member states to shift up to 20% of their CAP funds to rural development and agri-environmental programs. This could bring a major expansion of environmental stewardship programs in Europe as EU members redirect funds from commodity support to environmental and rural development objectives. Well-designed incentive schemes constitute 'quasi-markets' for public goods, correcting for a pre-existing market failure (Baldock and Lowe, 1996; Whitby 1996; Latacz-Lohman and Hodge 2003; Choe and Fraser, 1999). Various changes will be required in order to increase the environmental effectiveness and efficiency of agri-environmental mechanisms (Yano and Blandford, 2010; Ozanne et al., 2001; Falconer, 2000). In fact, with the 2003 reform, the integration of environmental goals has been pursued through the cross-compliance mechanism (mandate) that links direct payments of Pillar one to compliance by farmers with basic standards and the use of voluntary agri-environment measures in Pillar 2. Nowadays, in formulating its proposals for the revision of the CAP post-2013, the Commission opted to pursue further integration largely through Pillar 1 through the introduction of a 'green' payment for farmers following a specified set of mandatory farm practices (Matthews, 2013). In particular, the European Commission decided that 30% of the annual amount available for direct payments will be allocated to farmers for carrying out practices for the benefit of the climate and environment. This will be compulsory and failure to meet the requirements may result in a penalty that is higher than the 30% payment. The greening requirements will be the three basic EU measures or equivalent practices that provide an equal or higher level of benefit. The three basic measures are (Art 30-31-32):

- Crop diversification for arable land
- Permanent Grassland
- Ecological Focus Areas (EFAs).

The original guidelines (European Commission, 2011) stated that farms' cultivation on land over 3 hectares must be comprised of at least three different crops (in order to ensure an even mix of crops, in line with the aim of the measure, any one crop shall not cover more than 70% or less than 5% of the land), permanent grassland or pasture should be maintained and at least 7% of total agricultural land must be managed as 'Ecological Focus Areas' (EFAs).

The actual political agreement on greening CAP

During the negotiations and debate the specifics behind the message of greening the CAP were altered. To receive green funding, farmers still have to meet the

three main criteria of crop diversity, maintenance of grassland, and management of land as EFAs, but the environmental guidelines have changed.

Crop diversification

This measure is intended to promote mixed cropping with the aim of benefiting biodiversity, landscape diversity, soils and water, and pest and weed control. The Commission proposal (Tab. 1) is that a farmer must cultivate at least 2 crops when his arable land exceeds 10 hectares and at least 3 crops when his arable land exceeds 30 hectares. The main crop may cover at most 75% of arable land, and the two main crops at most 95% of the arable area.

Table 1. Crops diversification requirements.

ORIGINAL PROPOSAL (OCTOBER 2011)		FINAL PROPOSAL (JUNE 2013)	
Arable area	Requirements	Arable area	Requirements
< 3 hectares	No crops diversification	<10 hectares	No crops diversification
> 3 hectares	At last three different crops must be grown	10 to 30 hectares	At last two different crops must be grown
		>30 hectares	At last three different crops must be grown

The crop diversification requirement will not apply where:

- more than 75% of the arable land is grass or fallow and the remaining area is less than 30 hectares.
- more than 75% of the eligible agricultural area is grass (permanent or temporary) and the remaining arable area is less than 30 hectares.
- more than 50% of the declared arable area was not declared the previous year (i.e. is new to the applicant) provided all arable land is cultivated with a different crop to the previous year.

Permanent grassland

This measure is intended to conserve the area of permanent grassland and thereby its biodiversity, landscape, resource protection and climate change mitigation and adaptation benefits. Permanent grassland is defined as land out of rotation for more than five years. Member states will ensure that the ratio of permanent pasture does not fall by more than 5% compared to the reference ratio (grassland in 2012 / grassland in 2015). Member states draw up a designation of areas of permanent grassland that are 'environmentally sensitive'. This will include areas covered by the Birds & Habitats directive but may also include other

areas to be decided by member states. Farmers will not be permitted to convert or cultivate grassland that falls within the newly designated areas.

Ecological focus areas

This measure is intended to benefit biodiversity, landscapes, soil and water quality; climate change mitigation and adaptation, pest control; and pollination. However the benefits are likely to depend on how the measure is implemented, the types of land covered and the practices permitted. Where the arable area is more than 15 hectares, applicants must manage at least 5% of their arable area as EFA. It is proposed to increase this to 7% following a review in 2017. EFA will include land managed as fallow, buffer strips, nitrogen fixing crops, managed landscape features, short rotation coppice etc. The EFA requirements will not apply where:

- more than 75% of the arable land is temporary grass, fallow or leguminous crops and the remaining area is less than 30 hectares
- more than 75% of the farm is grass (permanent or temporary) and the remaining arable area is less than 30 hectares.

In order to avoid penalizing those that already address environmental and sustainability issues, the accord foresees a "Greening equivalency" system whereby the application of environmentally beneficial practices already in place are considered to replace these basic requirements. For example, organic producers will have no additional requirements as their practices are shown to provide a clear ecological benefit. For others, agri-environment schemes may incorporate measures that are considered equivalent. The new regulation contains a list of such equivalent measures. To avoid "double funding" of such measures, the payments through RD programmers must take into account the basic greening requirements (EC, 2013).

Methodology

In order to evaluate the differences between the initial proposals of the European Commission (2011) and the final agreement in June 2013 on the "Greening" package a simulation of green payment on three representative farms for Marche region (Farm A, Farm B and Farm C) was implemented. Economic data used for the study were provided by the FADN INEA database and simulations of conversions were made by examining the territorial suitability and the individual farmers' intentions. The simulation assumes that the new CAP will be working at full capacity. Greening prize for each hectare of land is calculated based on a distribution of EU funds on a national basis and also the Italian agricultural area of reference, amounting to 12,885,000 hectares, is based on 2010 Agriculture Census.

The Greening payment's definition was done by calculating the 30% of the budget of the hypothetical 2011 multiannual financial framework (MFF) and

by dividing it with the Italian Utilized Agricultural Area (UAA). The same procedure was adopted to assess the final amount that farmers will receive starting from 2014 by using the definitive budget agreed on 26 June 2013. In doing so, the amount paid for the green initiatives is € 89.4 per hectare for the original proposal, while the actual payment will be € 86.4 per hectare. Regarding to the measure on crop diversification (Article 30) new crops will be included in the crop rotation of farms until the minimum required. In this case the compliance costs of measure is calculated taking into account the loss of income due to the abandonment of the main crop and the cost due to structural adjustment. As regards the second measure there will be consequences only for farms that own meadows pastures. The cost depends on impossibility of conversion of the land. Finally, the cost of the EFA will be based on the calculation of the Gross Saleable Production (GSP) loss due to the UAA reduction (7% and 5%).

Case studies: the farm cost compliance of greening payment

FARM A

The farm covers 42.97 hectares in the hinterland of Macerata (Tab. 2) and it is managed by the owner alone. The property is divided into several fields that make up a homogeneous body corporate. The fertility of the soil is good and it is not planned irrigation. The labor used is only a familiar one. The type of farming adopted here is the most common in the region of Marches context. This farm specializes in intensive wheat cultivation, where the rotation of cultivation is based on the alternation of durum wheat and alfalfa cultivations. The sunflower cultivation has been abandoned due to agricultural and economic problems. Operating machinery used in this farm does not supply to the complete management of the farm.

For the assessment of the future “greening package”, the importance of the communitarian funds for the farm must be taken into consideration, especially for what that concern the current situation. From the comparison between the technical and economic parameters (Tab. 2 and 3), it can be observed how important the EU funds are, since they represent an essential share of the farm’s profitability (Tab. 4).

Tab. 5 shows the amount of the Greening payment based on the Commission proposal 2011 and Political Agreement 2013 equal to € 89.4 and € 86.4 per hectare respectively.

The greening costs are defined as follows.

Crop diversification. According to original proposal (October 2011) the farm A will have to adapt to articles 30 and 32. Crops’ diversification for farms over than 30 hectares includes three crops. To the current rotation of cultivations, a new one will be added, and knowing the territory the sunflower cultivation seems a rational choice (Tab. 6). The minimum area to be allocated to this crop is 5% of the

Table 2. Technical parameters (FADN, 2009-2010).

UAA <i>Utilised Agricultural Area</i>	42,97 ha
UAA in property	42,97 ha
Total Work Hours	1.600 h
Family Work Hours	1.600 h
External Work Hours	50 h

Table 3. Economic parameters (FADN, 2009-2010).

MO <i>Market output</i>	52.398 euro
EBTDA <i>Earnings Before Interest, Taxes, Depreciation and Amortization</i>	25.870 euro
NOM <i>Net operating margin</i>	23.370 euro
NI <i>Net Income after taxes</i>	23.190 euro
CC <i>Current costs</i>	22.270 euro
TS <i>Total Sails</i>	36.304 euro
PA <i>Public Aids</i>	16.842 euro

Table 4. Economic indices (FADN, 2010).

	WITH PUBLIC AIDS	WITHOUT AIDS
MO/UAA – Land productive	1.219 €	827,46 €
NI/UAA -Land Profitability	540 €	148 €

Table 5. Greening payment (€).

Farm A		Commission Proposals October 2011		Political Agreement June 2013		Payment difference 2011-2013
Greening	Farm A land	€/ha	Tot Farm A €	€/ha	Tot Farm A €	€
	42,97	89,4	3.841	86,4	3.713	128

total that means around 2.5 hectares. For agricultural and environmental reasons, a uniform rotation of the three cultivations (durum wheat, sunflower and alfalfa) will be taken into consideration. The main costs that the farmer has to support are calculated considering the rates of external subcontract in 2010 (price list APIMA) (Tab. 7).

Table 6. Crop diversification (ha).

CROPS ROTATION	UAA 2010 ha	UAA 2019 ha
Durum Wheat	21,4	13,3
Sunflower	0	13,3
Alfalfa	21,4	13,3
Ecological Areas	0	3

Table 7. Crop diversification cost compliance (€)

ART 30 COST: CROP DIVERSIFICATION €	
Harvesting	598,4
Seeding	944,3
TOTAL	1.542,7

According to final agreement (June 2013) the Commission proposals were not changed for farms cultivating over 30 hectares. The 5% of the total area has to be reserved to the less profitable cultivation. The adjustment costs of farm A to Art.30 will remain the same as previously calculated (see Table 7).

Ecological focus area (EFA). According to original proposal, Farm A maintenance costs of 7% of the ecological area (EFA) are calculated as PVL's decrease due to the loss of three hectares of productive land. The surface is subtracted to the two cultivations of the farm. The data RICA 2010 about profitability/hectare in the centre of Italy were used to estimate the loss of profit of wheat. Even the profitability's loss of alfalfa's cultivation has been deduced through a rational process and market prices 2010.

The final compromise reached by the European Institutions has reduced to 5% the areas reserved to ecological area. That means that the farm will get an extra hectare to be calculated. The adjustment cost to art. 32 is calculated with the same process previously examined (Table 8).

Table 8. EFA cost compliance (€).

ECOLOGICAL FOCUSAREA	Ha -7% (Commission Proposals 2011)	€	Ha -5% (Political Agreement 2013)	€	Payment difference 2011-2013
Wheat reduction	1,5	-570,87	1	-380.58	+190,3
Alfalfa reduction	1,5	-1050	1	-700	+350
TOTAL €	3	-1.620.87	2	-1080.58	+540.29

As shown in table 8, the application of the new EFA misuse (June 2013) will entail a considerable decrease in the farm's cost (540 euro) compared to the original proposal (2011).

In summary, the analysis of the correctness of Greening contribution is calculated as the difference between the adjustment and the contribution costs incurred by the farm. The pre June's final decision's assessment and the post June's final decision's assessments are compared to understand how deeply the scope of the Greening has been resized during the decision-making process.

Table 9. Cost and benefit of greening (€).

Greening measure	Commission Proposals 2011 (€)	Final Political Agreement 2013 (€)
Greening Payment	+3.841	+3.713
Greening Cost:		
- Crop diversification	-1.542,7	-1.542,7
- EFA	-1.620,87	-1080,58
TOT	3164	2.623
Difference	+677	+1.090
Difference between Commission Proposals and Final Political Agreement	+413	

As provided by table 9, it is important to underline that the reduction of the EFA obligation in the last Commission Proposal 2013 from 7% to 5%, produces a net profit (+413 Euro) for the farms.

FARM B

Farm B is a wine-growing and wine-producing farm in Marches 'hinterland. It is located in the "Verdicchio di Matelica" district, which is a great area for wine-production. This farm has 11 hectares (Table 10) where they grow refined wine-varieties, such as "Verdicchio di Matelica D.O.C" and "Rosso dei Colli Maceratesi D.O.C.G". These wines are produced, bottled and sell by the farm itself. The family labor is the farm form organization.

The CAP funds perceived in 2010 do not represent a fundamental share in the general profitability of the farm (Table 11 and Table 12).

Similarly, the "Greening payment" does not represent an economic discriminate for the farmer (Table 13).

The greening costs are defined as follows.

Crop diversification. According to original and final proposal, the winery farm does not have any obligation to respect crop diversification since it does not have any arable area.

Table 10. Technical parameters (FADN, 2009-2010).

UAA <i>Utilised Agricultural Area</i>	11,00 ha
UAA in property	11,00 ha
Total Work Hours	2.000 h
Family Work Hours	2.000 h

Table 11. Economic parameters (FADN, 2009-2010).

MO <i>Market output</i>	121.917 euro
EBTDA <i>Earnings Before Interest, Taxes, Depreciation and Amortization</i>	48.692 euro
NOM <i>Net operating margin</i>	42.242 euro
NI <i>Net Income after taxes</i>	45.649 euro
CC <i>Current costs</i>	40.945 euro
FC <i>Fixed costs</i>	38.730 euro
TS <i>Total sails</i>	129.886 euro
PA <i>Public Aids</i>	2.500 euro

Table 12. Economic indices (FADN, 2010).

	WITH PUBLIC AIDS	WITHOUT AIDS
MO/UAA – Land productive	6.651,22 €	6.524,5 €
NI/UAA -Land Profitability	2.490,4 €	2.364,1 €

Table 13. Greening payment (€).

Farm B		Commission Proposals October 2011		Political Agreement June 2013		Payment: difference 2011-2013
Greening	Farm B Land	€/ha	Tot Farm B €	€/ha	Tot Farm B €	€
	11,00	89,4	983.4	86,4	950.4	33.00

Ecological focus area (EFA). According to original proposal, article 32, as presented to the European commission, represents the most dangerous menace for the farm B's example. Farm B has to convert over half hectare (7%) of its vineyard. This type of cultivation, like orchard and olive tree grove, are not included in the proposal of the commission. The farmer must uproot 0.7 hectares of vineyard converting them into set-aside and buffering stripes. In this example (Table 14), the income loss is calculated as the difference between the missed wine sell

and the missed charges. Finally, the uprooting costs and the costs for the creating of the set-aside are added (Table 15).

The total amount of the EFA measure amounts to 4.390 € (Tab. 16).

The final policy agreement has strongly modified the article proposed by the commission (Table 17).

Table 14. Farm loss income (€).

Loss of Income	€	Interested land 7 % (0.77ha) €
UAA/ha	11.083	7.758
(Fixed costs +current costs)/ha	7.243	5.070
<i>Net operating margin</i> (Market output-costs)	3.840	2.688

Table 15: Farm cost (€).

Set-aside implementation	€/ha	Land. ha	€ Tot
Explant Cost	2.200	0.77	1.540
Set aside	210	0.77	162
Total	2.410	0.77	1.702

Table 16. EFA cost compliance (€).

EFA	€
Commission Proposals 2011	
EFA Cost	
- farm loss income	2688
- new cost	1702
TOT	4.390

Table 17. EFA cost compliance (€).

	Ha -7% (Commission Proposals)	€	Ha -5% (Political Agreement)	€	Payment difference 2011-2013
Vineyard land reduction	0.77	-4.390	0	0	+4.390

As we can see (Table 18), the revision of the EFA article (art. 32) in June 2013 has allowed to include the orchards and in particular the vineyards and olive

groves inside the definition of ecological focus area. This resolution is not irrelevant for the Italian agriculture lands and not only (Mediterranean countries). As provided by our analysis, this new proposal permits to reset the cost of compliance introduced by first proposal and, at the same time, to recognize a strategic ecological value of traditional Italian agricultural landscape. The first proposal, as a paradox, would endangered a big number of farms, compromising the Italian countryside.

Table 18. Costs and benefits of greening (€).

Greening measures	Commission Proposals 2011 €	Final Political Agreement 2013 €
Greening Payment	983,4	950,4
Farm's costs for the adjustment	4.390	0
Difference	-3.407	+950,4
Difference between Commission Proposals and Final Agreement		+4.357

FARM C

The last case study is an upland farm located on Sibillini Mountains areas that is characterized by extensive farming system. The UAA of the farm is 52 hectares characterized by pasture system and sheep breeding (over than 200 animals). Moreover, the system is not permanent pasture, but is grass meadows system. Only 17 hectares are in property; the others are rented in order to ensure the sustainable management (Table 19). Rotational grazing is the predominant system. The main crop rotation includes alfalfa, grass meadows, wheat and barley. Except for wheat, the other products are reused inside the farm as diet for the sheep (80% of total) (Table 20). The farm system provide raising sheep for meat.

CAP public aids represent a fundamental voice in the farm's budget (Table 21). Without this external help the farm could not continue the activity. Basically the main problem is the marginality of the enterprise and the higher costs related to the geographic context.

As shown in table 22, the "Greening payment" represents an important economic input for the farmer in both proposal. Looking at the prospect the difference between the first and final EU proposal is not significant.

The greening costs are defined as follows.

Crop diversification. According to original and final proposal, looking at the current rotation, there are already three crops in the farm. So even if the arable lands are more than 30 hectares, the respect of this compliance is not a cost.

Ecological focus area (EFA). According to original proposal, even if it could appear very strange, the only cost that Farm C must support is the adjustment to the EFA. In fact all the cultivated lands are arable lands and there are not per-

Table 19. Technical parameters (FADN, 2009-2010).

UAA <i>Utilised Agricultural Area</i>	51.32 ha
UAA in property	17.32 ha
Total Work Hours	1.440 h
Family Work Hours	1.440 h

Table 20. Economic parameters (FADN, 2009-2010).

MO <i>Market output</i>	23.118 euro
EBTDA <i>Earnings Before Interest, Taxes, Depreciation and Amortization</i>	12.833 euro
NOM <i>Net operating margin</i>	8.833 euro
NI <i>Net Income after taxes</i>	17.078 euro
CC <i>Current costs</i>	8.473 euro
TS <i>Total Sails</i>	16.577 euro
PA <i>Public Aids</i>	16.818 euro

Table 21. Economic Indices (FADN, 2010).

	WITH PUBLIC AIDS	WITHOUT AIDS
MO/UAA – Land productive	450 €	290 €
NI/UAA -Land Profitability	285 €	125 €

Table 22. Greening Payment (€).

FARM C		Commission Proposals October 2011		Political Agreement June 2013		Payment difference 2011-2013
Greening	Farm C Land	€/ha	Tot Farm C €	€/ha	Tot Farm C €	€
	46,32	89,4	4.141	86,4	4.002	139

manent pasture. The farm must reconvert 3.6 hectares into set-aside. This solution seems to be the less expensive for the farms (Table 23); sheep can continue to use this land even if the productivity is lower. As a consequence the total amount of cost compliance is 1224 euro, that is about 30% of the greening subsidy (Table 24).

Also in this case the real cost for this measure will be lower. In fact the new agricultural area to revalue is 2.5 (5%) instead of 3.6 hectares (7%) (Table 25). Based on the previous description of the new proposal if “more than 75% of the arable land is temporary grass, fallow or leguminous crops and the remaining

Table 23. Profitability (€/ha) of alfaalfa and meadow pasture.

	Units	Not irrigated alfaalfa	Meadow pasture
Productivity	Ql/hectare	100	50
Selling price	€/ql	10	9
Total value of products	€/hectare	1000	450
Production costs	€/hectare	300	90
Profitability	€/hectare	700	360

Table 24. Efa cost compliance (€).

EFA Costs (Commission Proposals)	Hectares	Cut €/ha	€
Alfaalfa land reduction	3.6	340	-1.224

Table 25. EFA cost compliance (€).

	Ha -7% (Commission Proposals)	€	Ha -5% (Political Agreement)	€	Payment difference 2011-2013
Arable land reduction	3.6	-1.224	0	0	+1.224

Table 26. Cost and benefit of greening (€).

Greening measures	Commission Proposals 2011 (€)	Final Political Agreement 2013 (€)
Greening Payment	4.141	4.002
Farm's costs for the adjustment	1.224	0
Difference	+2.917	+4.002
Difference between Commission Proposals and Final Agreement	+1.085	

area is less than 30 hectares", the farm is exempted from the EFA implementation. This management has promote the ecological and biodiversity system.

European Parliament's work and the final resolution have preserved a lot of extensive farms. Now "Greening" package seems to contribute to the aid of those agriculture farms that produce environmental services (Table 26).

Concluding and remarks

The future of the CAP remains unclear. Pillar 1 greening proposals have caused and continue to be the subject of much debate. The issues associated with greening are complex and relate to funding, eligibility and fit with existing CAP measures.

The most prominent innovation in the European Commission's 2011 proposal for new regulations for the Common Agricultural Policy post-2013 was undoubtedly to earmark a proportion of direct payments as a mandatory green payment for farmers who follow a number of practices beneficial to the environment and climate. This was put forward both to address some of the pressing environmental challenges arising from farming activity across the EU as well as to justify the continuation of a large budget for agricultural policy in the parallel negotiations on the future of the EU's long-term budget. Make the Common Agricultural Policy more effective (Matthews, 2012). However, the greening package has been the main area of debate about the 2014 CAP reform proposals. During the course of negotiations, the greening package has been weakened in terms of environmental benefits: to date, the green measures are become a form of super cross-compliance.

Our analysis aimed at evaluating the "cost" of greening as the capacity of the green component of the new direct payments to compensate the variation of income due to the implementation of greening measures: the crops diversification and the introduction of the EFA. As shown in our analysis, the "cost" of greening is different from farm to farm, because public goods are different and their costs depend on many local conditions. The analysis highlights that the incidence costs to implement the greening measures in the arable farms are higher. The reduction of income in these arable areas is mainly due to the introduction of the crops diversification and the introduction of EFAs. Indeed, arable farms will receive a minor contribution due to greater adjustment to environmental constraints. On the other hand, the vineyards (same as orchards and olive groves) and pasture farms could benefit from the greening contribution due to lower costs of adjustment in respect of non-productive investments (buffer strips, etc.). The June proposal permits to reset the cost of compliance introduced by the first proposal and at the same time to recognize an ecological value of the Italian countryside, leaving the effects only to the arable farms. However, a broader question is related to the assessment of the optimal greening contribution for the pasture farms (permanent or temporary) which, most of all, produce environmental benefits.

Some thoughts arising from this research.

- 1) The interaction between the approach taken to Pillar 1 greening and the implications for Pillar 2 agri-environment schemes it is not clear. Maybe it is necessary to examine the options for re-calibrating Environmental Stewardship in a way that raises the bar of the current Entry Level Stewardship (ELS) scheme (Hart K., Baldock D. 2011; Silcock et al. , 2012).
- 2) However, the reduction of CAP budget allocation as a result of overall EU budget negotiations leads one to think that there will be a disproportionate and negative impact on the overall Pillar 2 budget and consequently an adverse effect

- on the agri-environment budget; agri-environment schemes will be particularly affected given the distribution of the current Pillar 2 budget.
- 3) The future arrangements for upland farms (most of which excluded from the program greening as small farms) will require particularly careful consideration given their special circumstances and contribution to public goods.
 - 4) Moreover, as a result of greening, the environmental baseline provided through Pillar 1 should be raised to some extent. This presents an opportunity to improve scheme coherence within Environmental Stewardship and to refocus and enhance ELS. This in turn should enable future priorities to be addressed through a successor scheme (ELS+) subject to the available budget.
 - 5) In order to meet these aims, a future ELS scheme should benefit both the farmed environment and sustainable farming. It should build on the achievements of ELS to date, and focus on and incentivise sustainable agricultural production and the delivery of a broader range of ecosystem services. In particular it should support the maintenance of pasture system in the mountain areas and landscape scale working and ecological networks, climate change, etc.
 - 6) The ability of the scheme to deliver these goals will depend on good design, implementation and sufficient budget. Farmer and wider stakeholder including agricultural economists involvement will be vital to help shape the scheme, identify national and local priorities for the territory, put in place the right packages of options, integrate them with other rural development measures.

References

- Baldock, D. and Lowe, P. (1996), 'The development of European agri-environmental policy', in M. Whitby (eds.), *The European environment and CAP reform: policies and prospects for conservation*. CAB International, Wallingford.
- Cardillo, C., Cimino, O., Henke, R. and Vanni, F. (2012), "Delivering public goods in agriculture: the cost of green payments for Italian farms", 126th EAAE Seminar "New challenges for EU agricultural sector and rural areas. Which role for public policy?" Capri (Italy), June 27-29, 2012.
- Choe, C. and Fraser, I. (1999), "Compliance monitoring and agri-environmental policy", *Journal of Agricultural Economics*, Vol. 50, No. 3.
- Dobbs, T. and Pretty, J. N. (2004), "Agri-Environmental Stewardship Schemes and Multifunctionality", *Review of Agricultural Economics*. Vol. 26, No. 2, pp 220-237.
- European Commission (2011), "Impact Assessment. Common Agricultural Policy towards 2020", Commission Staff Working Paper, Brussels, February 2011.
- Falconer, K. (2000), "Farm-level constraints on agri-environmental scheme participation: a transactional perspective", *Journal of Rural Studies* 16 (2000) 379-394.
- Hart, K. and Baldock, D. (2011), "Greening the CAP: Delivering Environmental Outcomes through the Pillar One", Institute for European Environmental Policy IEEP, July 2011.
- Hart, K. and Little, J. (2012), "Environmental approach of the CAP legislative proposal", *International Agricultural Policy*, 2012, Issue 1, 19-30.
- Hodge, I. (2001), "Beyond agri-environmental policy: towards an alternative model of rural environmental governance", *Land Use Policy* No. 18, pp. 99-111.

- Latacz Lohmann, U. and Hodge, I. (2003), "European agri-environmental policy for the 21st century", *The Australian Journal of Agricultural and Resource Economics*, 47:1, pp. 123–139.
- Matthews, A. (2012), "Greening the CAP: the way forward". 126th EAAE Seminar "New challenges for EU agricultural sector and rural areas. Which role for public policy?", Capri (Italy), June 27-29, 2012.
- Matthews A. (2013), "Greening agricultural payments in the EU's Common Agricultural Policy", *Bio-based and Applied Economics* 2(1): 1-27, 2013.
- Ozanne, A., Hogan, T. and Colman, D. (2001), "Moral hazard, risk aversion and compliance monitoring and agri-environmental policy", *European Review of Agricultural Economics* 28(3): 329–347.
- Silcock, P., Allen, B. and Hart, K. (2012), "Land stewardship in England post-2013: CAP Greening and Agri-Environment", Report No: CC-P-570, IEEP.
- Westhoek, H., van Zeijts, H., Witmer, M., van den Berg, M., Overmars, K., van der Esch, S., and van der Bilt, W. (2012), "Greening the CAP- An analysis of the effects of the European Commission's proposals for the Common Agricultural Policy 2014-2020", PBL Netherlands Environmental Assessment Agency, The Hague.
- Whitby, M. (1996), "The European environment and CAP reform: policies and prospects for conservation", Whitby, M. (eds.), CAB International, Wallingford.
- Yano, Y. and Blandford, D. (2010), "Agri-environmental policy and moral hazard under multiple sources of uncertainty," *European Review of Agricultural Economics* Vol.38 (1) (2011) pp. 141–155.
- Zeijts H. van, Overmars K., van der Bilt W., Schulp N., Notenboom J., Westhoek H. Helming J., Terluin I., Janssen, S. (2011), "Greening the Common Agricultural Policy: impacts on farmland biodiversity on an EU scale", PBL Netherlands Environmental Assessment Agency, The Hague.