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Cross Compliance of CAP First Pillar Measures: A Transaction Costs Assessment

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Abstract— The 2003 review of the Common Agricultural Policy (CAP) has introduced several new policy tools, among which cross-compliance. The introduction of this new policy entails production costs, along with other types of costs arising at the farm level: administrative, information, organisational costs, called transaction costs. The purpose of this paper is to determine the nature of transaction costs and to assess them. The literature on transaction costs in agriculture has, until now, mainly been devoted to the voluntary measures implemented within the framework of the European agri-environmental policy. The first part of the paper intends to use this literature to apply the private transaction costs analysis to the issue of cross compliance. The second part attempts to assess these costs. On the basis of a survey conducted in 2006 among a sample of 39 farmers from the Midi Pyrenees French region, a descriptive statistical analysis (Multiple Classification Analysis - MCA) permits to associate farmer profiles with different levels of incurred transaction costs. These profiles reveal the impact which the farmers' responsibilities (professional networks) and the role of voluntary commitments previously undertaken may have on the nature and importance of transaction costs. This paper opens up new perspectives on the adoption criteria that should be taken into account in the evolution of agri-environmental regulations. It appears that growing administrative requirements could prompt farmers to outsource tasks which most of them carry out on their own today.

Keywords— Cross compliance, Transaction costs, CAP

I. INTRODUCTION

The implementation of cross compliance, within the framework of CAP Mid-Term Review, is a tool devoted to reconciling agricultural activities with environmental protection. The full payment of subsidies (under the “first pillar” of the CAP) is contingent upon the farmers' compliance with 19 European directives and regulations (environment, food security, animal and plant health, animal welfare). It is also subject to the implementation of Good Agricultural and Environmental Conditions (GAEC) concerning soil fertility, defined by each Member State. In addition to these GAECs another compulsory measure consists in maintaining the overall permanent pasture area in every Member State. It is the first time this type of measures involves all of the farmers receiving CAP direct payments. Indeed,

the EU's environmental directives were not, until now, linked to any particular agricultural support policy, and the measures proposed today were, so far, endowed with a voluntary character (within the scope of the Agri-Environmental Measures or “second pillar” AEMs). This is a novel kind of incentive for farmers, which combines regulations with financial sanctions. In the long run, the objective obviously is to achieve a better environmental state than through voluntary measures, by targeting a higher number of farms.

These new measures' efficiency may be analysed by considering the farmer's cost of entry into the system – or cost of compliance –. This production cost is to be compared with the compensation granted or with the incurred loss of income. A preliminary work has revealed that the incentive incurs such financial penalties, compared with the direct costs of compliance that farmers should comply (Mosnier *et al.*, 2006). Yet, many farmers show scepticism with regard to these measures. This opinion certainly arises from the uncertainty due to the evolution of the CAP and the potential future reinforcements of environmental constraints are concerned. All farmers do not have the same capacity for overcoming a possible reinforcement of environmental constraints. This capacity is linked to the management of certain transaction costs, which differs from one type of farmer to another. Indeed, besides production costs, this new subsidy scheme may entail information, organisational, or administrative costs as well. Cross compliance brings into play far more complex relations than a simple transaction between a farmer and the authorities. It involves a network of organisations (cooperatives, producer interest groups, *etc.*) participating in this process. A part of the transaction costs may be borne by these organisations. The purpose of this paper is to apprehend the extent of such costs and to assess them.

The first part presents a theoretical approach and a method to investigate transaction costs in the scope of cross compliance under the CAP first pillar subsidies. In the second part, we suggest assessing transaction costs on the basis of a sample of farms from the Lauragais Tarnais region. A farmers' typology emerges according to the extent and nature of such costs.

II. TRANSACTION COSTS: THEORETICAL FRAMEWORK AND APPLICATION TO CROSS COMPLIANCE

In this first part, the type of transaction considered in the cross compliance scheme of the CAP 1st pillar subsidies is characterised, starting from the existing literature on transaction costs.

A. Definitions and Concepts

The transfer of property rights associated with economic activities entails implicit costs, called transaction costs. Some operations or transfers of property rights cannot take place insofar as the incurred transaction costs are higher than the expected earnings (Coase, 1960). The definition in the case of market transactions may be extended to the various forms of transactions whether these take place on a market, via a government's intervention, or through institutional arrangements among the parties involved. These transactions may, or may not, involve a financial transfer. Thus, transaction costs are, in a more general sense, costs generated by the organisation and coordination of human interaction (Challen, 2001). Here we should quote an older literature which classifies transactions into three types: *i) bargaining transactions*, *ii) managerial transactions*, when one of the parties involved is inferior or superior, and *iii) rationing transactions*, when one of the parties involved is a collective superior while the other is made up of private agents (Commons, 1931).

In agriculture, the management of externalities concerning natural resources may be interpreted in the light of the rationing transaction definition and transaction cost theory: in most situations, there cannot be any spontaneous internalisation or transfer of property rights between the farmers and society without the intervention of a public authority (Vatn, 2005). Generally, the situations of uncertainty and information asymmetries among agents constitute the main origin of transaction costs (Vermersch, 1996). Until now, the adoption of voluntary AEMs measures has been widely explored as main source of transaction costs (for instance, Ducos and Dupraz, 2005; Van Huylenbroeck *et al.*, 2005; Képhaliacos and Robin, 2004). Within the scope of AEMs, information asymmetry between the regulator and farmers results in economic inefficiencies. Indeed, if the regulator were perfectly informed (especially concerning the costs involved for the setting up of AEMs and the

efforts farmers are willing to undertake), and if he could use this information when defining and elaborating the contracts offered to farmers, the efficiency of such contracts would be improved.

The case of cross compliance can also constitute a *rationing* transaction incurring new transaction costs. In view of showing this, we intend to use the tools and methods developed within this framework with the aim of extending their application to the analysis of cross compliance measures.

B. Transaction Costs and Agri-Environmental Contracts

In the case of agri-environmental contracts, the transaction between farmers and the government may be viewed in two ways: *i)* farmers are sellers of environmental goods and services bought by the government, or *ii)* the transaction involves a change in the farmer's practices which reduces negative externalities or produces positive externalities. Such a transaction results in a transfer of the rights of property and use of the resources exploited by farmers to the whole of society (Grimal *et al.*, 2002).

Agri-environmental contracts are defined by numerous characteristics such as the eligibility constraints, possibilities of renegotiation, training possibilities or obligations associated with the implementation and monitoring of such contracts. These characteristics give rise to transaction costs not only for the farmers themselves, but also for the public administration. Two types of transaction costs may be distinguished, as follows:

- *Public transaction costs borne by the State and public service agencies*, which may be classified into two categories: *i) fixed costs* linked to the system's elaboration, implementation and evaluation, and *ii) variable costs* linked to the system's running such as the examination, supervising, monitoring, and payment of contracts (Falconer and Whitby, 1999). Public transaction costs estimates reveal that the European agri-environmental policy is very costly. On the other hand, fixed costs permit economies of scale: the more contracts or hectares under a same programme, the lower the average cost per contract or per hectare. Furthermore, transaction costs can be lowered due to the experience of the administrative agents (and farmers too) who participate in the implementation of the programmes.

- *Private transaction costs borne by the farmers themselves*, which relate to the search for information on the contracts proposed or on the regulations set up,

the administrative procedures farmers need to carry out, the contract's negotiation, as well as the implementation and adoption of the new measures in force (Van Huylenbroeck *et al.*, 2005).

C. Private Transaction Costs (TCs) in Cross Compliance Implementation

In the scope of the CAP 1st pillar cross compliance, the commitment made and signed by the farmer (prior to its submission to the relevant arbitrating authorities) is equivalent to the creation of a new transaction – rationing transaction – between the State and the farmer. The change in policy generates additional private transaction costs that are likely to affect farmers. They need to inform themselves about the new regulations, to assimilate the content of the measures, to implement and monitor them. So it is important to determine precisely what these costs are and to put forward indicators assessing their influence.

Farmers' private transaction costs depend on the individual characteristics of the farm, of the farmer, as well as of the organisational or institutional networks in which the farmer is involved (Vanslebrouck *et al.*, 2002). Traditional transaction costs can be illustrated as:

Information costs: time and expenses necessary to gather information regarding the new regulations and modes of enforcement of cross compliance measures;

Administrative costs: time spent in recording practices and filling in CAP forms. Administrative costs also include hardware costs and the possible time spent on software training;

Organisational costs: time and expenses entailed to comply with the new measures (change in practices, need for technical support, organisation of "in-farm" administrative tasks, monitoring tasks, *etc.*).

Various indicators can be used to determine the importance and nature of these transaction costs :

The frequency of the steps/transactions undertaken: transaction costs may be reduced if the farmer is already involved in an environmental contract (AEM, label for good farming practices, quality certification, *etc.*), inasmuch as specific investments have already been carried out, along with the emergence of certain "routines" which reduce negotiation and training costs (Ménard, 1996);

The degree of uncertainty over the transactions undertaken and, especially, the degree of confidence placed in the new CAP;

Asset specificity: for instance, the farm's specific location (relief, climate, zoning), characteristics

(investment in terms of equipment, building, hardware), human capital, quality standards (labels, certifications, *etc.*).

Another source of influence on TCs can be sought in the governance structure. Thus, the transaction between farmers and the State is a succession of interdependent transactions involving professional organisations, landowners, advisers, and subcontractors, before and after signing the environmental contract. According to Ducos and Dupraz (2005), the characteristics concerning the professional environment and partnership of farmers have significant effects on transaction costs.

Two types of partnership may be distinguished: one that puts the public authorities and farmers directly in touch (contractual relationship: CTE¹, CAD²), and another that brings in collective players, entrusting them with a more or less important role (local associations, farmer interest groups, unions, cooperatives, *etc.*). In the latter case, the collective system corresponds to a participative framework in which farmers and other partners may be integrated (Képhaliacos and Robin, 2004). These organisations support common costs and thus permit to reduce information costs, as well as facilitate the carrying out of administrative procedures and the negotiation process.

The second part of this paper proposes to assess private transaction costs arising from the implementation of the new CAP regulations. The purpose is to evaluate whether the existence of local coordination favours acceptance of the new policy and facilitates the setting up of cross compliance measures.

III. EMPIRICAL ANALYSIS OF CROSS COMPLIANCE-RELATED TRANSACTION COSTS IN FARMS FROM THE LAURAGAIS REGION

A sample of 39 farmers from the French small agricultural *Lauragais Tarnais* region is surveyed in order to test the indicators presented in the first part. Additional questions permit to reveal the farmers' degree of confidence in the new policy (Pascal, 2006).

All of the answers collected have first been the subject of a descriptive statistical analysis. This analysis, which characterises the sample, also permits

¹ CTE Territorial Farming Contract

² CAD Sustainable Agriculture Contract

to select explanatory variables for the study of private transaction costs linked to the enforcement of the CAP cross compliance principle.

A. Description of the Sample

Farmer Profiles

About half the farmers surveyed are 45 years old, and more than two thirds of them have a low training status. The great majority of farmers (92%) are members of an organisation (cooperative, union, etc.), but only 44% declare being in charge within such professional organisations. 59% of them hold extra-professional responsibilities. The farmers' relationship with cooperatives is mostly commercial. Their other professional or extra-professional responsibilities give farmers greater access to information, which may help reduce certain private transaction costs.

Besides their membership of a professional organisation, farmers seek advice or different kinds of services from other sources. Cooperatives and professional organisations (*chambres d'agriculture*) provide them with all kinds of information and technical advice through meetings or training sessions, datasheets, bulletins, and field days.

B. Farm Characteristics

Farms are divided into three categories: "Cereals & Oilseed Plants" (23 farms) (predominant in the area); "Breeding of Dairy/Beef Cattle" (5 farms); "Large-Scale Farming, Breeding & Diversified Farming" (11 farms). In the area, the proportion of diversified farms is high (20%).

The data relating to the farmers' voluntary commitments before the last CAP reform permit to assess the frequency and stringency of such commitments.

Out of all farmers surveyed, more than half (59%) have entered into AEMs. The main AEMs contracted by farmers are concerned with input reduction and simplified cultivation. Besides these agri-environmental contracts, numerous farmers have entered into other types of contracts: More than 50% have specific contracts with a local cooperative: from simple cultivation contracts (20%) to the farmer's involvement in some quality process (30%); Nearly 30% of them exhibit recognised signs of quality, such as labels or PGIs³. Finally, breeders are generally committed to codes of good farming practice.

³ PGI Protected Geographical Indication

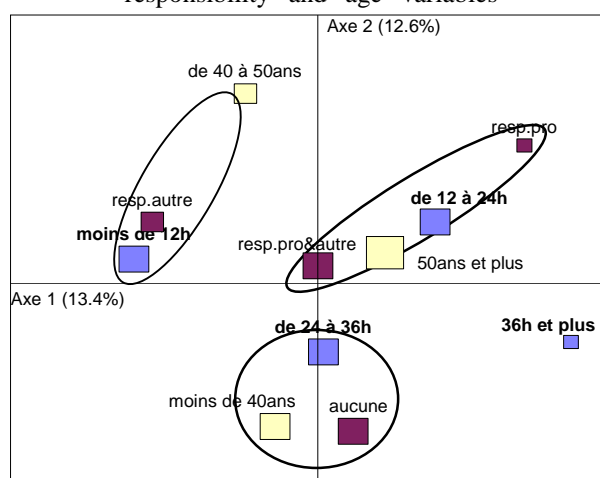
C. Transaction Costs Analysis

A multivariate analysis (Multiple Correspondence Analysis -MCA) permits to examine the correlations existing among the various qualitative variables collected in the survey.

Time Devoted to Cross Compliance Data Gathering

The time farmers devote to gathering information on cross compliance is expressed in hours per year. Fig. 1 emphasises the relationships between the time spent, farmer's age and responsibilities held.

Fig. 1: MCA - Crossing of the "information search time", "responsibility" and "age" variables



Older farmers (40 years old and over) are inclined to be more involved in agricultural and extra-professional organisations than younger farmers. Older farmers devote less time to gathering information on cross compliance than younger farmers.

Farmers who are involved in agricultural or extra-professional organisations thus have greater access to information, which enables them to reduce the cost generated by cross compliance information search.

Time and Expenditure Devoted to the CAP Form Elaboration

Nearly 60% of the farmers surveyed applied to some para-agricultural organisation to fill in their CAP form (26%) or to have it checked (33%). The main organisation applied to is the Chamber of Agriculture. Overall 74% of farmers filled in their form on their own (even if they had it checked subsequently).

The MCA method brings to light the links between the time devoted to the CAP form elaboration, the farmer's age and type of responsibilities held. Older farmers (45 years old and over) devote less time to it insofar as they get information and advice via the professional network in which they are involved. This argument backs up our previous result.

Time Devoted to Practice Recording

All of the farmers surveyed record their practices either on paper (54%) or on electronic format (46%). In fact, many of them record their practices on paper, on a daily basis, before re-transcribing these data through electronic medium with a view to being more credible in the event of control.

All of the farmers recording their data through electronic medium already had a computer when cross compliance came into force, and so did not have to invest in hardware. Some of them (5 out of 18) do not have any particular software programme and simply use an Excel spreadsheet. Those who have chosen to record their data via a software programme (13 out of 18) have had to make some particular investment both in terms of training time (1 to 3 days) and software acquisition (subscription, software purchase or updates), with variable costs. Practice recording does not require the intervention or assistance of any person but the farmer himself.

The data relating to the time spent on practice recording give some indication of the organisational cost this new requirement generates. In order to assess whether the increase in practice recording-related transaction costs diminishes with the farmer's degree of participation in voluntary schemes (such as quality contracts), Tables 1 and 2 below propose several crossings.

The time devoted to practice recording is negatively correlated with the commitments made by farmers. The higher the requirement level, the less time spent on practice recording. Indeed, the farmers surveyed who follow specific requirements (label-type, CTE-type) devote relatively much less time to recording their practices inasmuch as this has become a routine task.

Table 1 Crossing of the "recording time" and "AEM" variables

AEM contracted	Recording time
CTE	7 hours/y
CAD	9 hours/y
No AEM	16 hours/y

Table 2: Crossing of the "recording time" and "commitment"

Commitments	Recording Time
No commitment	12 h/year
Cultivation Contract with the GCO Cooperative	14 h/year
Code of Good Farming Practice	12 h/year
Quality Specifications	9 h/year
AEM	7 h/year

Time Devoted to the Projected Fertilisation Plan Elaboration

The Projected Fertilisation Plan (PFP) concerns nearly 77% of the farmers surveyed. For 41% of them, this requirement does not entail any specific knowledge. Those for whom this measure called for specific knowledge (33%) applied to some agricultural adviser from the Chamber of Agriculture, without there being any particular expenditure involved.

The correlation between the time devoted to the PFP elaboration and age (and so training status) is strong: younger persons, with a higher training status, are likely to have specific knowledge which enables them to meet this requirement easily.

The time farmers spend elaborating the PFP is not linked to their involvement in any CTE. The Projected Fertilisation Plan was not a requirement until the cross compliance principle was introduced. The farmers' involvement in a CTE did not specifically prepare them to meet this particular cross compliance requirement.

IV. CONCLUSION

The CAP MTR changes (cross compliance) generate additional private transaction costs. The purpose, in this paper, was to determine and analyse such costs on the basis of a survey conducted among a sample of farmers from a small region of Midi-Pyrenees. The results bring out three types of private transaction costs: *i*) information costs, connected with the time farmers devote to searching for information on cross compliance; *ii*) administrative costs, mainly related to the time farmers devote to filling in the CAP form and recording practices; *iii*) costs arising from the Projected Fertilisation Plan elaboration.

The individual characteristics of the farm, of the farmer, as well as of the organisational and/or institutional networks in which the farmer is involved, have an impact on the nature and importance of

transaction costs. Two farmer profiles are distinguished within the sample. The first corresponds to farmers who bear lower transaction costs, are generally involved in an agricultural or extra-professional network, and are committed to voluntary contractual programmes (CTE, label, code of good farming practice, etc.). These “committed” farmers have broader access to information, which enables them to reduce the costs arising from cross compliance information search. Moreover, the frequency of contractual undertakings and their requirement level contribute to reducing the transaction costs related to practice recording or the implementation of certain cross compliance measures. The second profile corresponds to farmers who bear higher transaction costs, who do not participate much in professional networks, and are not or little involved in contractual programmes. These farmers are mainly oriented towards the production of cereals & oilseed plants. The requirements of cross compliance appear as new in these systems and therefore call for information time and training. All in all, it seems that cross compliance implementation generates higher transaction costs for large-scale farms than for breeding farms⁴.

Though the results achieved can hardly be generalised (low sample), some prospective changes may be envisaged in the agricultural sector, involving farms, cooperatives, and accompanying organisations. If administrative requirements are to increase as a result of future CAP reforms, farmers will be likely to outsource tasks most of them carry out on their own at present. It could then turn out to be necessary to take into account all of the farm’s costs, as well as the impact on the farm’s economic viability. Furthermore, there could be repercussions on the activity and viability of all economic players and support organisations competing for the provision of services to farmers. It then proves useful to continue and refine the analysis in the context of the CAP evolution. Beyond increased requirements for the granting of first pillar subsidies, the process of contracting schemes in the agricultural sector is likely to spread.

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⁴ The cost of standardisation of livestock farms’ buildings has not been covered by this survey.