SOCIAL CAPITAL AND FARMERS' WILLINGNESS TO ADOPT COUNTRYSIDE STEWARDSHIP SCHEMES

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ABSTRACT

The EU provides farmers with incentives to adopt Countryside Stewardship Schemes (CSS) using subsidies in the framework of the agri-environmental regulation of the EU (2078/92), now included in the more general regulation on rural development In this paper, a case study of 36 farmers in the village of Bierbeek was carried out to investigate the determinants of the willingness to adopt a scheme involving taking care of arable field margins in particular. Bivariate and multivariate logit analysis confirmed not only the importance of personal, structural and financial factors, but also showed the importance of social capital. Farmers who are more open to both professional and non-professional contacts are more likely to adopt a CSS. Hence, government and extension agencies should undertake more efforts to involve farmers as much as possible in activities of professional, but also non-professional, nature to stimulate them to adopt sustainable farming practices.

INTRODUCTION

Environmentally friendly farming has been stimulated in the EU using subsidies in the framework of the agri-environmental regulation of the EU (2078/92), now included in the more general regulation on rural development (1257/99). Van Huylenbroeck and Whitby (1999) provide the first cross-country, empirical study to examine the market effects of stewardship policies across Europe, as well as their possible impact on the supply of agricultural commodities. However, the implementation of these regulations have met

with considerable delay in Flanders, as legislation was only adopted starting January 1, 2000. In addition, it is suggsted that in general Flemish farmers are not very willing to adopt stewardship practices.

Factors determining farmers' willingness to adopt environmentally friendly farming practices identified by the literature include personal (attitudes, age, education), structural (farm size and financial situation) and environmental or policy attributes (location, policy). However, more and more, social capital is acknowledged to be of critical importance in farmers' decision-making, besides human and physical capital. However, as social capital refers to the degree of social connectivity of a farmer, it can have both positive and negative effects: social capital can enhance business through better networks, but it can also inhibit business as a result of obligations within the network.

This paper investigates whether farmers with more social capital are also more willing to adopt sustainable farming practices, as they experience a sense of social responsibility. More specifically, a case study has been made of the village of Bierbeek in the province of Vlaams-Brabant.

LITERATURE

The most comprehensive study investigating the factors that influence farmers' participation in agri-environmental schemes involved a survey of 1,000 farm households in nine EU countries and Switzerland (Wilson and Hart, 2000). Besides some geographical differences across Europe, they found that the importance of financial imperatives and goodness of fit, and the influence of similar sets of factors such as farm size, tenure, or farm type were universal. Earlier studies were confined to the United Kingdom. For example, Morris and Potter (1995) found wide variations in the level of commitment and sympathy with the wider objectives of agri-environmental schemes and place farmers on a participation spectrum ranging from the most resistant non-adopters at one end to the most active adopters at the other. Battershill and Gilg (1997) found that the attitudinal dispositions of farmers

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were more important than their structural constraints or opportunities in influencing farm decision-making.

Wilson (1997) analysed farmers' motivations for participation in the Cambrian Mountains ESA scheme. Wilson found that size and existence of remnant wildlife habitats were strongly correlated with overall participation, but also payments offered by the scheme, information provided by the consulting firm ADAS, scheme flexibility and dynamics within the district were of particular importance. Age, education and length of residency were important for explaining differential entering of specific habitats into the ESA scheme, while scheme duration, dependence on the farm for income, tenure and the general information environment of the farmer did not influence overall participation.

Morris et al. (2000) used the theory of diffusion and adoption of innovation to gain an understanding of farmer attitude towards and willingness to participate in the Arable Field Margins option of the Countryside Stewardship Scheme, and to assess the effectiveness of actions to promote participation amongst arable farmers. Informal interviews, followed up by a telephone survey, confirmed that for CSS arable options to be attractive, they must be perceived to be practical, offer adequate environmental and financial reward, and fit in with a predominantly commercial farm business purpose. Appropriate promotional pathways were identified for each stage of the adoption process to encourage farmer participation, emphasising the importance of change agents and communications channels.

While Falconer (2000) points to the potentially heavy transactions costs, for both the state and farmers and to the importance of the longer-term value of farmer networks and capacity-building for agri-environmental management, there has been no specific reference to social capital as an important determinant of adoption. However, the interest in "social capital" is increasing rapidly during the last decade. The fact that it encompasses different concepts explains part of its popularity. That is why one should be careful with the interpretation of results as indicators and methods used depend on the approach of the scientist (Wall et al., 1998).

Coleman (1988) attends that the concept of social capital cannot be captured by a single definition. However, recurring elements are that social

capital involves social structures or networks which enhance certain actions, such as the adoption of a technology or practice, trade, etc. Social capital thus encompasses elements such as obligations, expectations, channels of information and social norms. Relationships with other actors are crucial in the concept of social capital. Social capital can be regarded as an input or production factor. It does not only facilitate the access and use of physical capital, but sometimes even replaces other forms of capital. The impact of social capital on certain activities crucially depends on the nature of those activities. In certain cases, social capital facilitates the accomplishment of specific goals, such as trade (Minten and Fafchamps, 1999). In other cases, social capital may have no effect or even a detrimental effect, such as the problems of hold-ups in transition economies (Gow and Swinnen, 1998).

Important elements in the adoption of innovations (including environmentally-friendly practices) are access and use of information. The importance of information increases with the complexity of the innovation (Nowak, 1987). Education plays a key role in the uptake of information, as better educated farmers are better informed, not only about technologies, but also about the detrimental effects of unsustainable practices (Ervin and Ervin, 1992). However, Drake et al. (1999) found that specific education in agricultural schools has a negative impact on the adoption of a CSS, as these schools put too much emphasis on production.

METHODOLOGY AND RESULTS

A survey was carried out among the farming community of a small rural village in Flanders, Bierbeek, using a random sample. Bierbeek is a rural village in the Belgian province of Vlaams-Brabant. On January 1, 1996, the village's population was 8,779 and its total surface 3,973 ha. A random sample of 59 full-time and part-time farmers was drawn from a total list of 80 farmers. Face to face interviews were carried out using a structured questionnaire. The non-respons was 39% and could be attributed mostly to lack of interest (43% of refusals) or the fact that the respondents were no longer farming (also 43%). This resulted in a sample of 36 farmers, of which 25% stated to be willing to adopt a countryside stewardship scheme (CSS) involving taking care of arable field margins, a percentage which is probably

biased upwards due to the high percentage of refusals. The actual adoption of CSS could not be investigated, as the government programme to subsidize such schemes was released at the same time of the survey.

With respect to the questionnaire and the methodology used in the study, the approach of Burton et al. (1999) was followed. They investigated the determinants of the decision to adopt organic production techniques and applied multinomial logit techniques to a sample of 237 horticultural producers from the UK. Their analysis indicates that organic horticultural producers are more likely to be younger, run smaller enterprises and be female than their conventional counterparts, and that there are significant non-economic aspects to the decision to adopt organic techniques which may be missed in comparative profitability studies. The important innovation of our study is that we include questions related to the farmer's strategy or farming style and farmers' network in addition to the usual variables related to human capital and the farm's physical characteristics. Also farmers' attitudes were investigated, but the results were not satisfactory and will not be reported, nor used in the analysis.

Table 1 summarizes how potential adopters and non-adopters have responded to the various questions. Potential adopters are younger and higher educated. These results confirm the importance of personal characteristics as identified by the literature. In addition, they are less dependent on the income earned from the farm as the spouse earns an off-farm income, suggesting the importance of financial constraints. Consistent with their lower age, none of the potential adopters are at the end of their career, but otherwise there seem to be no further differences in farming style. With respect to the social capital variables, the following observations are noteworthy.

First, potential adopters more often consult external contacts, regardless whether these are official or private. In other words, potential adopters are more open to external, professional advice. They also are more likely to attend farmers meetings and professional courses. Second, potential adopters are also more open toward non-professional external contacts, as becomes evident from their higher probability of direct sales on the farm and their higher involvment in non-professional societies.

Table 1: Descriptive statistics for potential adopters and non-adopters

	Variable name	Potential adopters	Non-adopters
Human capital			
Age (in years)	AGE	41	52
Education (% higher education)	EDUCATION	44	4
Agricultural education (% yes)	AGR_EDU	33	19
Does spouse earn off-farm income? (% yes)	SPOUSE	78	55
Are you engaged full-time in farming? (% yes)	FULL_TIME	56	56
Do you have a successor? (% certainly not)	SUCCESSOR	67	77
Farming style			
Cost minimizer	COSTS	33	22
Devoted craftsman	CRAFTS	22	19
Expansionist	GROW	33	22
Labour minimizer	LABOUR	11	7
End of carreer	FINISH	0	30
Farm size (ha)	SIZE	34	29
Social capital (% yes)			
Are you member of a farmers union?	UNION	56	67
Are you member of the village council for agriculture?	COUNCIL	44	37
Do you read an agricultural magazine?	MAGAZINE	89	81
Do you attend agricultural workshops?	WORKSHOP	44	48
Do you consult extension officers of			
the ministry of agriculture?	CONS_MIN	44	15
the farmers union?	CONS_UNI	44	19
a commercial firm?	CONS_COM	44	26
private consultants?	CONS_PRI	22	8
Do you consult other farmers?	CONS_FAR	67	37
Do you attend farmers meetings?	MEETING	67	11
Do you follow professional courses?	COURSE	44	33
Do you use official relations to obtain a goal?	RELATIONS	11	15
Do you sell some of your produce on the farm?	DIRECT	44	15
Are you member of at least one non-professional society?	SOCIETY	89	59

Finally, a multivariate probit analysis was carried out to investigate the probability of adoption of a CSS. The results of four different specifications are reported in table 2.

Table 2: Multivariate probit analysis with willingness to adopt as dependent variable, regressors with p-value between brackets

	Model 1	Model 2	Model 3	Model 4
SIZE	-0.01 (0.19)	-	-	-
FULL-TIME	-0.09 (0.53)	-0.16 (0.28)	0.17 (0.20)	-0.36 (0.06)
AGE	-0.02 (0.06)	-0.01 (0.05)	-	-
LN(AGE)	-	-	-0.71 (0.05)	-0.27 (0.16)
COSTS	0.19 (0.41)	0.29 (0.13)	0.57 (0.07)	0.34 (0.10)
CRAFTS	-0.00 (0.99)	-	-	-
GROW	-0.21 (0.35)	-	-	-
SOC_CAP	0.06 (0.05)	0.04 (0.05)	-	-
COURSE	-	-	-0.12 (0.21)	-0.21 (0.09)
CONS_MIN	-	-	0.82 (0.02)	-
DIRECT	-	-	0.27 (0.11)	0.31 (0.09)
MEETING	-	-	-	0.91 (0.02)
log likelihood	-14.15	-15.41	-11.06	-8.79

The probit analysis confirmes that younger (and better educated) farmers are more willing to adopt a CSS. Also part-time farmers and farmers with a cost-saving strategy are more likely to adopt a CSS. Farm size has a negative but insignifcant effect. An index of social capital was constructed consisting of the following elements: membership and presidency in professional organisations, use of professional magazines, attendance of professional workshops and courses, use of advisors (of the ministry, the farmers' union or other), use of advice from other farmers, use of connections, number of marketing channels, and direct on-farm sales of farm products. Both the index and several of the individual elements had a positive and significant effect on the willingness to adopt a CSS, which confirms that social capital is an important factor in decision-making regarding sustainable farming practices.

CONCLUSIONS

This paper reported the results of a case study of 36 farmers in the village of Bierbeek investigating the determinants of the adoption of countryside stewardship policies in general and the management of arable field margins in particular. The analysis confirmed that both personal and structural factors, and probably also financial factors, determine farmers' willingness to adopt environmentally friendly farming practices. The analysis also showed the importance of social capital. Farmers who are more open to both professional and non-professional contacts are more likely to adopt a CSS. Hence, government and extension agencies should undertake more efforts to involve farmers as much as possible in activities of professional, but also non-professional, nature to stimulate them to adopt sustainable farming practices.

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BIOGRAPHICAL SKETCH

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