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Motivations for implementation of ecological compensation areas on Swiss lowland farms



Robert Home*, Oliver Balmer, Ingrid Jahrl, Matthias Stolze, Lukas Pfiffner

Research Institute for Organic Agriculture (FiBL), Ackerstrasse, CH-5070 Frick, Switzerland

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Swiss farmers receive subsidies for reserving ecological compensation areas on their farms with the aim of encouraging biodiversity, but recent studies have found that the existing system of incentives is insufficient to halt biodiversity loss in the Swiss agricultural landscape. An effective targeting of incentives is needed to motivate farmers to implement conservation measures on farmland. The primary aim of this study is to identify the motivations that contribute to the intention of Swiss farmers to engage in conservation on their farms. Fifteen Swiss lowland farmers were interviewed using qualitative interviews and their responses to questions about their attitudes toward nature conservation were categorised and classified according to Ajzen's (1991) theory of planned behaviour. It was found that the farmers' identities and their experiences with past nature conservation measures combine with their expectations of direct benefits, such as financial incentives, and their trust that the measures will produce the desired outcomes, to form a behavioural attitude. The sampled Swiss farmers display a strong sense of fairness, which drives them to comply with subjective norms, although they feel torn between a societal expectation to conserve nature and a wish to appear productive to their peers. We conclude by recommending that any changes to the policy framework should be undertaken in a consultative process and that Swiss lowland farmers be allowed the flexibility to implement measures that will produce the best conservation outcomes on their farms.

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1. Introduction

Agricultural landscapes, especially those with a fine-grained mosaic and low-intensity production systems, were formerly rich in biodiversity (Edwards et al., 1999). In recent decades, many more intensive forms of agricultural production, with an associated decline in semi-natural landscape elements (Robinson and Sutherland, 2002) have led to declining species richness (Billeter et al., 2008). Most EU countries have introduced agro-ecological schemes aimed at protecting biodiversity and making farming more sustainable (Kleijn and Sutherland, 2003). The scheme introduced in Switzerland in 1993 is based around cross compliance, with subsidies paid in exchange for proof of ecological performance (PEP), and requires that farmers reserve a minimum of seven per cent of their land area as ecological compensation areas (ECAs). Cross compliance is a potentially powerful policy instrument (Aviron et al., 2009) because farmers have to meet

environmental standards in order to qualify for area-related direct payments.

ECAs contribute to the maintenance of the diverse, historically evolved cultural landscape, encourage biodiversity by providing small-scale habitats for plants and animals within that landscape, and contribute to the well-being of the population by providing possibilities for contact with nature (FOEN, 2012). Landscape, biodiversity and public well-being all have the characteristics of public goods and it is usually the task of government to finance the creation of public goods (Friedman, 1990). The Swiss Confederation adopts this role and provides direct payments to farmers to maintain near-natural and valuable habitats in areas of economic agricultural production and to manage sites of low productivity to prevent the spread of woodland and maintain the mosaic-like landscape. The years between 1993 and 2000 saw a large increase in the quantity of declared ECAs in Switzerland with the area increasing from 70,000 to 120,000 ha. The PEP scheme was extended in 2001 with the "Environmental Quality Ordinance" (EQO) that aimed to preserve ecological compensation areas of particular biological quality and included the concept of networking. ECAs in Switzerland mostly consist of extensively managed meadows (70%) and traditional, extensive orchards with

* Corresponding author. Tel.: +41 62 865 7215.
E-mail address: robert.home@fibl.org (R. Home).

trees on standard rootstock (20%) and include a small percentage of “wildflower strips”, which are areas of fallow land sown with wildflowers and herbs (FOEN, 2012).

Lachat et al. (2010) warn that the continued decline in biodiversity cannot be halted with the existing agro-political instruments and many experts fear that the decline of species and habitat diversity will continue unless there are major changes in policy based on improved technology and scientific knowledge (Billeter et al., 2008). In many cases, the success of a strategy is dependent on those who are expected to implement it or to tolerate the restrictions that are frequently associated with conservation interventions (Cocklin et al., 2007; Hunter and Rinner, 2004). The implementation and maintenance of ECAs in Switzerland is carried out by farmers and Dallimer et al. (2009) pointed out that management variation at property level contributes to biodiversity patterns at regional scale. One reason for the unsatisfactory effect of agricultural policy measures on Swiss biodiversity is the failure of the current direct payment system to sufficiently motivate Swiss farmers to engage in on-farm biodiversity conservation and to efficiently guide them by an advisory service how to best implement it using a whole-farm approach (Chevillat et al., 2012).

Acting to conserve biodiversity on private land requires the design of policies to influence the decision-making of the landowners (Hanley et al., 2012) and government support programs often fail to encourage adoption due to inappropriate design and ineffective targeting of incentives (Rodriguez et al., 2009). Siebert et al. (2006) suggest that the capacity of farmers to act represents a key direction for future research and the task of influencing and changing behaviour needs to be conceived of as a medium to long-term process. Means of motivation will be more successful in leading to the desired behaviour if incentives or directives are tailored to both complement existing or intrinsic motivations and to remove barriers (Moon and Cocklin, 2011), which requires gaining an understanding of what motivates or hinders implementation of nature protection measures on farms. The aim of this study is to identify what motivates or prevents Swiss farmers from engaging in nature conservation on their farms. Understanding motivations would allow the measures that encourage farmers to maintain ECAs to be optimised, which could have positive effects on both the quantity and quality of ECAs.

2. Motivations of farmers

Considerable attention has been given in the social psychological literature about how to motivate people to behave in more environmentally friendly ways, although farmers' environmental behaviour and decision-making has been somewhat neglected by researchers (Lokhorst et al., 2011). Large areas of land are under agricultural production, with the consequence that sustainability and conservation issues can potentially have a large influence on biodiversity, so it is reasonable that knowledge gaps should be filled and that the areas that have been explored should receive further attention. Chouinard et al. (2008) and Lokhorst et al. (2011) both point out the body of research that does exist on farmers' attitudes and behaviour regarding nature conservation in agricultural areas, and into the relationships between motivations and the implementation of conservation practices on farms, is rarely approached with a clear theoretical framework. The literature on the conservation behaviour of farmers is ‘multi-threaded, divided, and often ad hoc’, with financial incentives being the most clearly described motivations of farmer behaviour (Chouinard et al., 2008; Feola and Binder, 2010).

Swiss policies that are intended to encourage farmers to implement ecological measures are based on a subsidy system; with direct payments to farmers as compensation for the public

goods, in the form of a contribution towards preserving natural resources, which farmers provide. The system is characterised by two steps: general and ecological direct payments. All Swiss farmers can qualify for general direct payments if they meet a number of prescribed ecological standards (Junge et al., 2011), which are collectively considered to be proof of ecological performance (PEP). The key elements of the PEP are an appropriate proportion of ECAs (at least 7% of the utilised agricultural land); rational use of fertilisers and pesticides; crop rotation; soil protection; economic and specific use of plant treatment products; animal welfare measures; and that hay-meadows are not cut before the 15th of June in low-land areas (Junge et al., 2011). Farmers are free to choose which of the prescribed types of ECAs to implement on their land (Reinhard, 2012). Ecological direct payments are an optional program of compensation for additional services, which aim to create habitats for indigenous wild animals and plants, and include additional payment for extensive meadow-land, reed-beds, natural field margins, permanent flowery meadows, rotated fallow fields, hedges, copses, wooded river banks, and standard fruit trees (with trunk and crown) (Reinhard, 2012).

Organic farming is additionally subsidised, and Swiss law dictates the minimum requirements, including implementation of at least 12 from a catalogue of ecological measures, that a farm must meet to gain the organic label and claim further direct payments. A parallel label in Switzerland is IP SUISSE, which is a joint NGO/private initiative for integrated pest management, and which is based around a system of points being allocated to implemented measures, from a pre-defined list, that demonstrate the ecological performance of the farm. A farm must achieve a certain number of points to gain the IP SUISSE accreditation label and qualify the farmer for higher product prices (by certain major retailers). Both organic and IP-SUISSE labelled farmers have some freedom to decide which measures they implement to meet standards, or gain sufficient points, to gain their respective label (Jenny et al., 2013).

The assumption behind the direct payment system is that farmers are primarily motivated by profit maximisation so financial incentives are the best way to motivate them to provide biodiversity benefits for society (Hanley et al., 2012). This assumption received empirical support by Cary and Wilkinson (1997) who found that perceived profitability was the most important factor influencing the application of conservation practices and exceeded the individual's conservation orientation. However, direct payments have been shown to be insufficient in achieving a positive impact on biodiversity in the landscape (Lütz and Bastian, 2002; Schenk et al., 2007), and Frey and Oberholzer-Gee (1997) found that price incentives might even reduce intrinsic motivation, so it appears that incentives other than financial may play a role in the implementation of agro-environmental measures. Wilson and Hart (2000, p. 2161) propose that, while financial incentives remain an important motivation for farmers to implement nature conservation measures, ‘the financial imperative for participation does not necessarily exclude an often equally important environmental concern’. Wilson and Hart (2000) further argue that their ‘new hypothesis’ deserves attention from researchers interested in environmental attitudes and behaviours among farmers, while de Snoo et al. (2010) similarly pointed out that behavioural aspects need more scientific attention.

Chouinard et al. (2008) found evidence that some farmers are willing to forego some profit to engage in ecologically oriented farm practices and proposed that farmers see the choice as a trade-off between profits and conservation measures. The finding that some farmers are willing to forego profit while others are not suggests that there are individual differences in the degree of influence of financial incentives on behaviour. Siebert et al. (2006) propose that many policies implicitly standardise behaviour that

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