

Motivations for implementation of ecological compensation areas on Swiss farms

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Abstract: Ecological compensation areas are implemented on Swiss farms with the aim of encouraging biodiversity, but recent studies have found that the existing system of incentives for specific conservation measures is insufficient to halt biodiversity loss in the Swiss agricultural landscape. A project with the title “Score with biodiversity - farmers encouraging nature” (MVP) aims to contribute to a nature-friendly and economically strong agricultural sector, in which animal and plant species co-exist with agriculture in a way that is mutually beneficial. Two new instruments have been developed in the project. With a new points system, the performance of farms in the promotion of natural diversity is evaluated. The points system gives a clear indication to farmers where and how their contribution to biodiversity can be improved, and serves policy by enabling allocation of subsidies to be directed towards measures with quantifiable benefits for biodiversity. The second instrument is a new approach to consulting in which farmers collaborate directly with advisors to find the optimal measures to encourage biodiversity under the specific conditions of their farms. Farmers can then ensure their ecological measures are targeted to their local conditions and policy makers can be informed of which measures should be given priority support with incentives. As part of this collaboration, participating farmers were interviewed and asked questions about their attitudes toward nature conservation. It was found that 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. 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 offering several persuasion strategies that are based on reconciling the apparent dichotomy between production and nature conservation. Furthermore, we recommend that any changes to the existing policy framework should be undertaken in a consultative process and that farmers be allowed the flexibility to implement measures that will produce the best conservation outcomes on their farms.

Keywords: ecological compensation, farmer motivation, biodiversity, persuasion strategies, direct payments, agro-environmental program.

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 & Sutherland 2002) have led to declining species richness (Billetter et al., 2008). Most EU countries have introduced agro-ecological schemes aimed at protecting biodiversity and making farming more sustainable (Kleijn & 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.

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 (Hunter & 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 & 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.

Motivations of farmers

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 & Binder, 2010).

The assumption behind the direct payment system is that farmers are primarily motivated by profit maximization 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 (2008) 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 & 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’.

Siebert et al. (2006) propose that many policies implicitly standardise behaviour that should lead to implementation biodiversity measures and thereby oversimplify the complex social/natural network in which the farmer exists. Preconditions to the implementation of conservation measures that have been identified are the perceived relevance by the farmer (Burton et al., 2008), easy integration into the farm’s workflow (Jahrl et al, 2012), and the absence of barriers to implementation such as difficulty in obtaining accurate information about the benefits, social barriers, land tenure, infrastructure, and incompatibility (Rodriguez et al., 2009).

Method

This paper is based on a content analysis of 15 semi-structured, responsive interviews that were conducted with farmers in the Swiss lowlands: specifically from the Berner Mittelland, Solothurner Mittelland, Luzerner Mittelland, Aargau und Zürich regions. The focal regions are characterized by intensive crop production, which is almost exclusive to the lowlands because both climate and terrain make most of the remainder of the country unsuitable for crops (Jenny et al., 2013). The participating farmers managed medium sized mixed farms with fields and crops, ranging from 17 to 34 hectares (average 25.7 hectares: the Swiss average farm size is 21.5 hectares), which is typical in the study region. The participating farmers were asked what nature protection means to them, whether they see themselves as nature protectors, what reasons have influenced decisions to install ECAs, whether they consider themselves well informed about nature protection and subsidies, and what they think of the current system of direct subsidies.

Results and Discussion

The results of this study found that there was general agreement with the need for nature conservation, but production oriented farmers understand nature conservation as a goal that should be pursued off-farm, while conservation oriented farmers find it easier to explain the importance of nature protection on their farms. Production of on-farm nature is not considered by production-oriented farmers to be production, which implies that the concept of production is limited to things that can be physically sold. A paramount challenge is the formulation of strategies to expand the definition of production to include production of nature as well as production of what can be eaten or sold. De Snoo et al. (2010) argue that such expansion would invoke greater interest in on-farm nature and motivate farmers to move towards farming for conservation as well as farming for yield. This challenge is even greater when seeking to include concepts, such as biodiversity, in what can be included in their understanding of production. Despite the acknowledgement of the importance of nature to production (Bommarco et al. 2013), nature protection is not seen as a synonym of biodiversity protection.

The perception of farm/nature equivalence was already evident in some farmers, and reliable and practical demonstration (Matthies and Kroemker, 2000) of the benefits of on-farm nature (Bommarco et al. 2013) could create or reinforce these perceptions. Interdisciplinary work with ecologists, agronomists and communications specialists is desirable since it is imperative that demonstrations are true, and are communicated properly in answer to farmers who would “like to know if it’s any use, or what we can do to make it help nature”. Vanclay (2004) showed that farmers create their own knowledge that is based on experience and an understanding of the particular circumstances of their individual farm. While failure of a particular conservation measure could be due to a range of causes, seasonal causes, such as weather, are within the farmers’ ver-

nacular and understanding (Bartel, 2013) and would not be perceived as meaning that the action is fundamentally wrong. The results of this study suggest that this tolerance doesn't apply to anthropogenic causes of negative experiences, such as those caused by changes in legislation and regulation, so such changes should be accompanied by efforts to ensure that farmers who have implemented conservation measures are not disadvantaged.

Hanley et al. (2012) discuss a number of policy design problems, such as the need for spatial coordination and the choice between paying for outcomes rather than actions, which may allow these different worlds to be reconciled. Farmers understand production volumes, which are readily measured, so their worldview is fundamentally compatible with regulation based around outcomes. One solution could be to introduce some flexibility into the regulations to allow for seasonality, which would serve to transfer some ownership of the regulations to farmers (Barnes et al. 2013), and shift the payments from actions to outcomes as Hanley et al. (2012) suggest. This finding is supported by the farmers' premise that they know how to maintain nature on their farms if given the freedom to do so, which is compatible with Lokhorst et al.'s (2011) demand to place farmland biodiversity in the hands of farmers. However, Lokhorst et al.'s (2011) demands also included placing farmland biodiversity within farmers' minds, but the findings show that some farmers embrace farmland biodiversity more than others. Some farmers do the minimum measures to enable receipt of subsidies, and some farmers do not see biodiversity protection as an integral part of nature protection: particularly those farmers who take a productivist approach to farm management. Persuasion strategies are therefore needed that address all four of the dimensions identified by Siebert et al. (2006): farmers' willingness to participate, farmers' ability to participate, socio-cultural influences, and the effect of policy on these dimensions.

Conclusions

Reconciling the apparent dichotomy between production and nature conservation forms the basis of the recommendations that result from this study. The results allow the conclusion that the direct payment incentive system remains an important tool in persuading farmers but that it should be supplemented by the generation of strategies in three main directions. The first direction is to counter the perception among the responding farmers that nature conservation is equal to non-productivity, such as by expanding the definition of production so that providing the conditions for nature is perceived by farmers to be producing nature rather than simply not producing. Secondly, strategies should be sought to contribute to positive attitude formulation by creating the new belief that on-farm nature protection can enhance production, such as by practically demonstrating the productivity benefits of on-farm nature such as the many benefits of eco-services using a functional biodiversity approach. The third strategy direction would be to increase farmer confidence in the sense of the regulations, such as by introducing some flexibility into the regulations to allow for seasonality or by including more options in ECAs. Although information in itself has been shown to be a poor motivator of behaviour (Burton et al., 2008), adequate information for the farmer to make an informed choice is a pre-requisite for each of these strategy directions. Several farmers find the existing multi-layered system to be confusing and, although courses are available, a reasonable recommendation of this study would be the formulation of communication strategies that enable the transfer of information in a way that is understandable to farmers.

The results indicate the desirability of placing farmland biodiversity in the hands and minds of farmers (Lokhorst et al., 2011) appears to hold for Switzerland, so on-farm nature conservation interventions will be most effective if the farmers are convinced of their value and that they fit within the farmers' way of thinking. Consequently, any changes to the policy framework for implementation of ECAs would best be undertaken in a consultative process. It makes sense to cre-

ate a framework that provides opportunities to profit from the farmers' knowledge of what works best on their individual farms and which targets the many environmental issues.

Acknowledgments

This full version of this paper has been published in the *Journal of Rural Studies*, 2014, vol. 34, pp. 26-36, and the excerpts printed here are with permission from Elsevier. This study was undertaken as part of a larger project 'Mit Vielfalt punkten – Bauern beleben die Natur' (Score points with diversity - farmers reviving nature), which is sponsored by the Swiss Federal Office for the Environment, the Federal Office for Agriculture, the MAVA Foundation, the Sophie und Karl Binding Foundation, the AVINA Foundation, the Vontobel Foundation, the Dreiklang Foundation, the Ernst Göhner Foundation, and the Strafin Foundation. We would especially like to thank Christine Rudmann, who made this study possible, Lukas Frey for the superb translation, the entire project team for their support, and to all of the participating farmers who freely gave their valuable time. Mit Vielfalt punkten is a joint project with the Swiss Ornithological Institute in Sempach, Switzerland.

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