

Economic perspective on compensation schemes for farmers who suffered from wildfi...

[Business](#), [Human Resources](#)



Previous studies (Treves et al., 2006; Madden, 2008; Milheiras & Hodge, 2011; O'Rourke, 2014; Brochet et al., 2016; Marino et al., 2016) have suggested that mitigating human-wildlife conflict from human dimension should be valued more by the conservation authorities. This means that the conservation authorities have been attaching more importance to the social dimension in their mitigation strategies. Since human-wildlife conflict can be seen as the results from a critic that the public good is delivered at a private cost from an economic perspective, compensation to farmers for wildlife damage is commonly applied in mitigating human-wildlife conflicts from the social dimension (Schwerdtner & Gruber, 2007). Therefore, it aims to shift the economic responsibility to a border public, combining rural development with wildlife conservation, dealing with biodiversity conservation objectives through the use of socio-economic investment tools, and hoping to reduce the negative influences caused by human-wildlife conflict (Upadhyay, 2013).

There are two type of compensation:

1. ex-post
2. pay-in-advance, which will be explained further in this section.

Ex-post compensation pays according to the estimation of actual damage. In this way, the damage is assessed directly when it occurs. It is suitable for the cases in which the damages cannot be easily predicted due to their variation in time and/or space (Schwerdtner & Gruber, 2007). On the contrary, the compensation can also be implemented in advance. In this way, the damages are assessed indirectly based on probable consumption of resources in certain areas or by certain species (Upadhyay, 2013). The pay-

in-advanced type is considered as direct payment for conservation, which is in fact more cost-efficient regarding conservation aims (Milheiras & Hodge, 2011). It is suitable for the sites where damage is equally distributed spatially and temporally, and where the scheme is expected to run for a longer time. Moreover, this type of compensation can provide an incentive to prevent damage by investing in mitigation measurements, which may turn the compensation into income (Schwerdtner & Gruber, 2007). In conclusion, the main difference between the types is their transaction costs, which are related to the temporal and spatial distribution of the damage (Schwerdtner & Gruber, 2007: 354). Payment in advance is more likely to run for a long time without actually being needed for damage compensation, while the ex-post type provides no incentive to avoid damages.

Conversely, compensation schemes have been criticized because the payments can be seen as an agricultural subsidy, with the potential for increased growth of agricultural activity. Increased agricultural activity may lead to a decreasing wildlife habitat. Overall, such a situation results in the compensation scheme having adverse effects on a certain type and intensity of agriculture (Bulte & Rondeau, 2005). Moreover, although compensation schemes are expected to promote a positive attitude and tolerance, not all stakeholders are guaranteed to be more tolerant towards the endangered species that potentially cause damage (Naughton-Treves, Grossberg, & Treves, 2003). On top of that, there is also a possibility of farmer's negligence, or even feigned loss, for their crops or livestock, in order to simply receive the compensation payment. This is so-called moral hazard or hidden action problem (Schwerdtner & Gruber, 2007: 359) exists in ex-post

compensation schemes – a type of compensation that uses payment as a subsidy according to the estimation of actual damage – due to the lack of clear and enforceable conditions for eligibility criteria (Nyhus et al., 2005). When moral hazards occur, the compensation payments may even promote a reduction in defensive actions, which can create costs, in order to easily obtain compensation for damages (Bulte & Rondeau, 2005).

According to the previous studies, compensation schemes have become a widely used financial mechanism to reduce human-wildlife conflict in conservation projects. They function as a balance between the economic losses experienced by those communities living alongside reintroduced and endangered species (Upadhyay, 2013). Such compensation schemes are also utilized as attempts to improve attitudes towards the endangered species which have been reintroduced, as well as to reduce illegal wildlife killings in the surrounding communities (Nyhus et al., 2005; Schwerdtner & Gruber, 2007; Milheiras & Hodge, 2011; Mayhew et al., 2016). Consequently, it is crucial for conservation authorities to understand the importance of increasing the stakeholders' involvement, especially the local communities, in the decision-making process. In the other words, local people's involvement is a critical factor in any compensation scheme which aims to mitigate human-wildlife conflict. For instance, wolf management in Finland developed a continuum of privately funded actions at wolf territory level (Hiedanpää & Bromley, 2014), which showed a high level of community participation in the decision-making process and turned out to be a key point in seeking a long-term and sustainable way of compensation. Henceforward,

policy makers should acknowledge in two ways while implementing compensation as a mitigation strategy within conservation policy or wildlife management: 1) involvement of local communities is important within compensation, and 2) compensation is a useful tool for a conservation project (Vynne, 2009; Milheiras & Hodge, 2011; Bowen-Jones, 2012; Franks & Emery, 2013; Marino et al., 2016).