

Final summary of the impact of the LIFE for Insects project on the provision of ecosystem services

Ecosystem (ES) services monitored were food production, climate regulation – carbon sequestration, and fuel and biomass production. The main tool for the chosen methods and calculations of these three ES services was the TESSA methodology (Peh et al. 2017). Recreation was monitored as the fourth ES service, which was evaluated based on the output of Action D.2 – Evaluation of the impact of the project on socio-economic aspects.

Output of the climate regulation ES service

Together with the clearing of woody plants and the release of carbon due to the removal of biomass during grazing and mowing, the decrease in the carbon sequestration service due to the implementation of the project amounted to 9,130.768 tons (8,616.343 + 509.778 + 4.647).

Output of the food production ES service

Thanks to the restoration of pastures, it is now possible to graze 1,549 sheep on the project sites. The newly restored meadows will yield over 368 tons of hay, which is feed for 1,022 sheep at when housed. The planted fruit trees and bushes offer the potential of an annual fruit harvest of 234.64 tons at full production.

Output of the ES service fuel production and biomass

A total of 3,652.5 solid cubic metres of firewood and 25,164.5 solid cubic metres of biomass were obtained. Converted to more commonly used units, this is 2,435 m³ of firewood and 7,190 tons of biomass.

Thanks to the restoration of meadows and pastures, the ES services potential of food production has increased. The owners or lessees of the plots of the project areas benefited in the form of a one-time yield of firewood or biomass. As expected, there was a decline in the climate regulation service. However, this cannot be seen as damage caused by the project. We know from literature and experience that there is a trade-off between ecosystem services. The use of no site can be optimized to provide all ES services; on the contrary, often when the provision of one service increases, the provision of other service decreases. Typically, this relationship is inversely proportional between production and regulation services. Moreover, in the case of this project, it is primarily about habitat restoration that originally served as pastures or meadows, i.e., areas originally intended for food production. In addition, we assume that the decrease in the climate regulation service is compensated by an increase in the biological value (biodiversity) of the project sites, which is the main project intention. At the same time, biodiversity is unfortunately not understood as an ES service in itself. In the area of tourism in the region, there has been an increase in the number of visitors to some sites, the strengthening of ties between local residents, and support for the PLA Beskydy information centre.