Planting and management of hedgerows

Goal	Provision of habitat and winter quarters for beneficials and other wild animals and contribution to key ecosystem services
Target group	Any farmland, depending on the landscape (e.g. in steppes wild animals depend on completely open landscape, thus this measure may be less suitable).
Description of the measure	Hedgerows are important elements of the landscape. They provide nesting, breeding habitat and refuge, step stones for biotopes and stabilize the ecosystem. Planting Only plants of autochthon origin to the corresponding landscape shall be used. Local conditions, such as soil, humidity and shading need to be regarded by the choice of species. The center of the hedge may include higher-growing bushes. Distances between the plants must not be less than 2 x 2 m. At the margins, lower shrubs in a distance not below 1 x 1 m shall be planted. Around the hedgerows and shrub islands there may be enough space for the establishment of wild herbs. A planting scheme may help with the determination of amount of plants needed as well as the distribution of plants. During planting seedlings must not be unprotected or directly exposed to the sun. At best, roots of seedlings are stored in wet bags or buckets or wrapped with wet towels. Maintenance At least the first two summers after planting shoots should be protected from undergrowth by mowing or weeding. In a hot summer, irrigation of plants may be necessary in the first year. Starting with the 6th year after planting, pruning may be necessary in order to keep the plants on a certain height. Pruning must only be done during winter; in case of species with fruits which provide food for wildlife such as birds, ideally February/March. Pruning must only be done on one side per year and on maximum of 30–50 % of the whole hedgerows. Coppicing of either trees within the hedge or fast-growing bush-species may be done every 5-10 years in order to regenerate the hedgerows.
Suitable sites	▪ Parallel to agricultural working direction running embankments, slopes or field margins and ditches
How a good implementation looks like	▪ Hedge of at least 3–4 m width ▪ Length depending on the function and the landscape mosaic ▪ Hedge consisting of > 5 native species ▪ Representation of 3 strata: grass, shrub and tree element ▪ Strip of wild herbs or flowering strip surrounding the hedge ▪ Flower and fruit resources distributed along the year ▪ Works (pruning, re-planting …) should be avoided during sensitive period for biodiversity usually in spring during the breeding season.

Effects on biodiversity

(ecosystems, species, soil biodiversity)

The multilayered structure of hedges (soil-, herb-, shrub- and (if any) tree layer) facilitates a potential high **species diversity**.

Hedges support **structural diversity**, act climate regulating and as a **windbreak** (which is e.g. in favor of heat-dependent species such as butterflies).

Many species also use hedges as **winter quarters** (hedgehog, Common Toad, …), **hiding place** (Hare, Birds, …), **forage** (e.g. already in early spring for wild bees and other insects; berries and other fruits in autumn), as well as **territory border** (e.g. perches and song post for birds, such as red-backed shrike, barred warbler, brown linnet, greater whitethroat).

Other positive effects/benefit for the farmer

Hedges serve as habitat for many different beneficials. They feed and hunt within different radius, but most of them just reaching 30m from their retreatment area. Thus, with proximity to hedges the need of pesticides is reduced.

Woody linear elements, such as hedges and lines of trees can help to reduce wind and water borne soil erosion, and hedges are particularly important in steep terrain as they can reduce the risk of landslides. This ensures sustainable yields. Hedges also reduce the nutrient input on water bodies.

Wind protection of hedges on the wind protected side extend on the 10 to thirtyfold length of its height, e.g. an 1m high hedges influences the surrounding on 10 to 30 m: In that area, precipitation and soil humidity increase, evaporation decreases, which leads to a yield increase of 10–20 %. Thus, the yield increases even exceed the losses which may occur very close to the hedge (due to shade effects and nutrient concurrences).

Indicator/key data

- Hedge of at least 3–4 m width
- Number of species per hedge
- Length of hedge
- Complexity of the structure: grass shrub and tree elements are present

Risk and further recommendations	Hedges should only be planted on sites where they do not pose concurrence to animals which are dependent on open landscapes. In direct surroundings of hedges farmers may experience yield losses due to shade, water- and nutrient concurrence of plants with crops. Therefore, it is advisable to maintain a buffer strip of, e.g. flowering strips along the hedge. This increases furthermore the habitat quality. Hedges and margins can allow some weed species to proliferate and spread into crops and harbor pest species such as black bean aphids which can have negative environmental consequences if applications of pesticide and herbicide are increased as a result. Hedges may also support mice.
Timeframe (When to start a measure and anticipated time for implementation)	When to start: Best time to plant hedges is autumn, but seedlings can be planted through whole winter as long as the soil is not frozen.
Additional special resources/ equipment/ skills needed	None
References	▪ Bäume, Hecken und Biodiversität, SOLAGRO 4. Quartal 2002 ▪ www.nabu.de/umwelt-und-ressourcen/oekologisch-leben/balkon-und-garten/naturschutz-im-garten/01955.html ▪ www.landwirtschaft-artenvielfalt.de ▪ Promotion of biodiversity in fruit plantations – NABU; REWE and Lake Constance Foundation, 2015 ▪ Stiftung Rheinische Kulturlandschaft, DBU: Abschlussbericht Maßnahmen- und Artensteckbriefe zur Förderung der Vielfalt typischer Arten und Lebensräume der Agrarlandschaften, 2018 ▪ Entry Level Stewardship - Natural England publications

Further information: Knowledge Pool

This Action Fact Sheet belongs to the training package for advisors of standard organisations and companies and was developed within the project LIFE Food & Biodiversity (Biodiversity in Standards and Labels of for the Food Industry). The main objective of the project is to improve the biodiversity performance of standards and sourcing requirements in the food industry by helping standard organisations to integrate efficient biodiversity criteria into their schemes and motivating food processing companies and retailers to include comprehensive biodiversity criteria into their sourcing guidelines.

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