Green covers

Goal	Promote the use of plant covers to minimize soil erosion and degradation, and nutrient leaching to water bodies
Target group	Farmers who grow any kind of arable or permanent crops.
Description of the measure	Here, we understand green cover as any vegetation covering the agricultural plot between cropping during critical periods for avoiding soil erosion and nutrient leaching. This critical period is usually autumn and winter. Depending on the agro climatic conditions and crop systems, this can be done by using intermediate crops (a sown crop that is compatible with the crop calendar), green manures (sown plants for improving nutrient content on the soil and retaining them), cover crops (wild or sown crops that do not have necessarily a commercial interest, but also contribute to soil fertility), etc. The technical characteristics and terminology used for these agronomic techniques is diverse, but this measure tries to include all of them. Non-living soil covers (such as mulch, stubbles, etc.) are not considered in this measure, as they are already included in another fact sheet.
Suitable sites	▪ Almost in all agricultural soils, only limited by agro climatic conditions, for example when there is no soil moisture or enough rainfall for the cover crop to grow, as it happens in some semi-arid Mediterranean areas.
How a good implementation looks like	▪ Depending on agro climatic conditions, cover crops should be as diverse as possible (different types of plant covers delivering different benefits) and the soil should be left bare the minimum amount of time
Effects on biodiversity (ecosystems, species, soil biodiversity)	 ▪ The erosion risk is minimized ▪ When green covers are mown or tilled, they contribute to enrich soil organic matter contents and carbon sequestration ▪ They help to break weed cycles, thus reducing the need of using herbicides. The same happens with pest and diseases ▪ Nitrogen can be restituted by using cover crops
Other positive effects/benefit for the farmer	Soils are the foundation of agricultural activity. Improving soil performance is an investment in the long-term, especially with regard to climate change projections. Healthy soils are more fertile, can hold more water, have more biological activity, are better structured, more stable in terms of temperature… in short, more resilient to changes. Some soil covers (based on Brassicaceae plants and called biofumigants) can also be helpful to fight against soil pest such as nematodes.
Indicator/key data	▪ Number of days/year with agricultural soil covered by vegetation that is not the main crop

Risk and further recommendations	Green covers (including all the above-mentioned options) are not always easy to implement, as no general recipe works. Farmers have to explore the best option for their farm system, type of soil and agro climatic conditions. This in turn entails deciding on best species to sow, densities, appropriate time, following which crops, removal moment, technique for removing it, etc. Each farmer has a learning curve to experience.
Timeframe (When to start a measure and anticipated time for implementation)	On critical moments of the year in which risk erosion and nitrogen leaching is higher. In most cases, this period goes from autumn to winter, but it depends on the area (i.e. early spring rains or hard winds can also be a risk).
Additional special resources/ equipment/ skills needed	Despite each farmer needs to adapt green covers to its own circumstances, in most places there are front-runners that are ready to share their experience. There are also more and more information coming from agrarian institutions that can be helpful.
Reference	▪ www.soilwealth.com.au/resources/fact-sheets/soil-nutrition-and-compost/managing-cover-crop-residues-in-vegetable-production/ ▪ www.soilwealth.com.au/resources/fact-sheets/winter-cover-crops/ ▪ www.soilwealth.com.au/resources/fact-sheets/soil-nutrition-and-compost/summer-cover-crops/

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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